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Understanding the context of knowledge and values in natural resources decision making : a case study of Parks Canada's Recreational Activities Assessment framework

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UNDERSTANDING THE CONTEXT OF KNOWLEDGE AND VALUES IN NATURAL RESOURCES DECISION-MAKING: A CASE STUDY OF PARKS CANADA'S RECREATIONAL ACTIVITIES ASSESSMENT FRAMEWORK

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ABSTRACT

The range of natural, societal and nature-human interactions of contemporary environmental management, especially for parks and protected areas, is seemingly infinite and is continually changing in scope and complexity. Although natural processes are a significant consideration toward environmental management, the field is wrought with social issues and value-based decisions being made. The development of a new Recreational Activities Assessment Framework (RAAF) by Parks Canada provided a unique opportunity to examine a formal planning process in the field of protected areas management with a working group comprised of a diverse group of agency, academic and non-governmental participants.

The new RAAF is considered a tool to augment existing park and protected area management and systems planning processes. The principles of the framework are built on the premise that there will be a level of consistency across the system of parks and protected areas yet decisions are relevant to the local conditions and settings.

The exploration of differing knowledge claims within the decision-making process is presented in order to explore the role of expertise and the importance of the knowledge discourse between expert knowledge and lay knowledge.

The valuation of parks and protected areas further acknowledges that the desired outcomes of management decisions are essentially subjective in nature. Recognizing this understanding, it may be proposed that there is a variety of values that go into making such subjective determinations and that they may be generalized into two categories: non-preference-related values and preference-related values. These values help us to shape what we want and expect parks and protected areas to be and to provide.

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INTRODUCTION

The world is a dynamic and vastly complex system of natural and social processes. The measure of natural, societal and nature-human interactions of contemporary environmental management is seemingly infinite and is continually changing in scope and complexity. "There are biological, social and economic connections between different places and different system components; moreover, the processes of interaction are complex and dynamic" (Davey, 1998, p.13). Consequently, the planning and management of natural and cultural resources is also a dynamic, evolving process full of difficult and unique challenges. The capacity to deal with these issues is being aided through continued research and active collaboration between government agencies, stakeholders and interest groups. As a result, park planners and managers are learning more about the natural and social interactions occurring on the landscape. Personnel and task teams within government agencies and professional organizations committed to protected areas management are also evolving and there is an increase in active participation from interest groups, industry, and local and Aboriginal peoples in the planning and decision-making processes. As such, there is a greater emphasis on the need for fluid processes that foster collaboration between multiple-parties (Bouwen & Taillieu, 2004) and processes that can change as an organization and its members' needs change (Preskill & Torres, 1999). This movement toward a culture of 'interdependence' and continual social learning and change can be considered as part of a global shift toward sustainable natural and cultural resources management.

Parks Canada is an internationally renowned government agency that holds responsibility for the creation, planning and operation of Canada's system of nationally significant parks and protected areas. Canada's dedication to environmental and cultural

conservation is coordinated through a series of federally protected areas, consisting of complex systems of national parks and park reserves, national historic sites and national marine conservation reserves. As acknowledged by Davey (1998), protected areas also serve many functions other than biodiversity conservation and no protected area will succeed if managed in isolation. There are biological, social and economic connections between different places and different system components; moreover, the processes of interaction are complex and dynamic (Davey, 1998). The World Conservation Union (IUCN) recognizes the significant role that parks play as an effective tool for supporting local, national and international biodiversity policies and as places for scientific research, wilderness protection, maintenance of environmental services, education, tourism and recreation, protection of specific natural and cultural features, and sustainable use of biological resources (Task Force, 1998).

Parks Canada has endeavoured to protect areas of exceptional natural and cultural heritage while providing opportunities for outstanding recreational and educational activities (Parks Canada, 2006a). Protection, education and visitor experiences are the principle elements of protected area management in Canada and are, accordingly, central to the Agency's mandate (Parks Canada, 2007). The different elements of the mandate however have often been considered in isolation of each other, with little regard to how each piece relates and contributes to the larger picture. Effective planning and management of such protected areas requires a coordinated approach, both with respect to the various units within the system, and with other land uses and management activities (Davey, 1998). As human attitudes toward natural resources have evolved in response to changes in spiritual understanding and technological knowledge, the breadth of technical and social knowledge

required to manage such a broad mandate is diverse and continues to grow, (Halvorson, 1996).

Until recently, little research has been done in the field of natural and cultural resources management on how to identify and express the range of knowledge claims and perspectives that are part of such complex planning processes. Much of the information exchanged during a decision-making process remains part of the tacit knowledge base of an individual within a participant group and is rarely analyzed. As stated by Woodley, Kay, and Francis (1993), "human values are an integral part of the decisions to protect or rehabilitate, but the goals and objectives for such actions are often implicit or unclear" (vii). This research project proposes methods that will work to make such knowledge claims and expressed values more explicit. The purpose being to provide for easier recognition of knowledge and valuation discourses in decision-making.

This chapter will further describe the role of Parks Canada and the need to manage visitors with parks and protected areas, as well as to express the purpose and significance of this study.

Parks Canada and the Recreational Activities Assessment Framework (RAAF)

Protected Areas and Recreational Activities in Canada

Canada protects significant landscapes and seascapes through a series of protected areas. The three main designations of protected areas in Canada where certain uses are permitted to occur are national parks, national historic sites and national marine conservation areas. Each of these designation types provide a different level of protection for natural and

cultural resources; offer different recreational opportunities and experiences; and, generate different economic benefits for commercial enterprises through sustainable resource use.

National Parks and Park Reserves.

"Canada's national parks are a country-wide system of representative natural areas of Canadian significance. By law, they are protected for public understanding, appreciation and enjoyment, while being maintained in an unimpaired state for future generations. National Parks have existed in Canada for well over a century" (Parks Canada, 2007a).

The IUCN lists national parks as Category II protected areas with the purpose of national parks being a protected area managed mainly for ecosystem protection and recreation. They are considered as a clearly defined geographical space, recognized, dedicated and managed, though legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (Dudley, 2008).

National Historic Sites.

"The national historic sites component of Parks Canada is responsible for Canada's program of historical commemoration, which recognizes nationally significant places, persons and events. All such designations are made by the Minister of the Environment on the advice of the Historic Sites and Monuments Board of Canada" (Parks Canada, 2007b).

The IUCN lists national historic sites or natural monuments as Category III protected areas (1994). The purpose of a natural monument is as a protected area managed mainly for the conservation of specific natural features. They are areas containing one, or more, specific natural/cultural features, which is of outstanding unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance (IUCN, 1994).

National Marine Conservation Areas (NMCA).

"National Marine Conservation Areas...are marine areas managed for sustainable use and containing smaller zones of high protection. They include the seabed, the water above it and any species which occur there. They may also take in wetlands, estuaries, islands and other coastal lands" (Parks Canada, 2007c).

Pending the purpose and direction for the establishment and management of a particular national marine conservation area, it may be listed by the IUCN as a Category V, protected landscape/seascape, or a Category VI, managed resource protected areas. The purpose of protected landscapes/seascapes is for conservation and recreation. Protected landscapes/seascapes are areas of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant, aesthetic, ecological and/or cultural values, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area (IUCN, 1994). A resource protected area is managed primarily for the sustainable use of natural ecosystems. These areas contain predominately unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs (IUCN, 1994). The newly established Lake Superior National Marine Conservation Area is an example of such a movement toward sustainable development. Its vision is "to respect our natural and cultural heritage by balancing preservation and responsible use by all, for present and future generations" (Parks Canada, 2007c).

Commitment to the People

Government agencies have the responsibility to act in the best interests of its current and future citizens. Partnerships with local and Aboriginal communities, interest groups and non-governmental organizations have increased the accountability and transparency of operations within public agencies. The *Minister's Round Table on Parks Canada* is an example of a legislated directive (under the *Parks Canada Agency Act*) to provide "an invited group of stakeholders with the opportunity to share their views on Parks Canada's programs and performance and also to comment on the strategic direction that Parks Canada is following in the management of its national parks, national historic sites and national marine conservation areas of Canada" (Parks Canada, 2005c). Such relationships help to encourage a shared responsibility toward the planning and management of Canada's resources.

The Parks Canada Mandate.

Parks Canada is the federal agency responsible for the creation, planning and operation of Canada's system of national parks, park reserves, historic sites and marine conservation areas. The Parks Canada mandate is to:

> "Protect and present nationally significant examples of Canada's natural and cultural heritage and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for future generations" (Parks Canada, 2005a).

The specific challenges and opportunities to achieving such a mandate have been identified by Parks Canada and are outlined in their Corporate Plan for 2005-2010:

- Protection of heritage areas;
- Government commitments;

- Protecting ecological integrity;
- Protecting commemorative integrity;
- Infrastructure recapitalization;
- Building strong Aboriginal relations;
- Increasing public support and addressing changing demographics;
- Enhancing the visitor experience (2005a).

Protection is deemed to be the main concern of Parks Canada, in order to ensure that the natural and cultural heritage areas remain 'healthy and whole'. This is evident in the Agency's commitment to sustain and, where appropriate, restore ecological and commemorative integrity. Parks Canada has also recognized the need to improve its link to all Canadians (Parks Canada, 2005a). Much of Canada's population is concentrated in large urban areas, detached from many of the heritage areas. As such, the importance of extending the rationale and necessity for protected areas to the general public has increased. Education programs have been and will continue to be a major part of Parks Canada's operations. These programs are intended to foster such awareness, appreciation and understanding of our natural and cultural heritage to visitors. Visitor experience is also considered fundamental to the success and continued enjoyment of protected areas. In order to be successful, the programs and operations managed at the national and field levels must acknowledge shifting demographics and be receptive to the changing needs and expectations of current and potential visitors.

Building internal and external capacity.

In March of 2000, the Panel on the Ecological Integrity of Canada's National Parks recommended that Parks Canada significantly upgrade internal learning capacity, including

the natural and social sciences, planning, interpretation, environmental assessment, and the capacity to effectively build regional liaisons (Parks Canada, 2000). The Panel also recommended that Parks Canada improve its policies and programs for assessing recreational activities. Through *First Priority*, Parks Canada (2005b) committed to revising and upgrading these programs. This commitment to upgrading the learning capacity and knowledge systems within the Agency not only recognizes the importance of enhancing organizational knowledge management but also signifies a progression of Parks Canada to becoming a learning organization. Such upgrades will help Parks Canada to effectively deal with existing and emerging issues of recreation management in relation to the full scope of its mandate.

Visitor Management and Recreational Assessment

As identified by Nilsen and Tayler (1998), "a variety of planning and management frameworks have been developed for protected areas to address issues such as recreation carrying capacity; human use that causes stress for ecosystems; methods to determine appropriate types, levels, and conditions of use; and methods to inventory and manage an appropriate mix of visitor opportunities" (p. 49). A comparison by Nilsen and Tayler (1998) of the origins of each framework reveals that each approach was established as a collaboration between researchers and Federal agencies or non-governmental organizations; benefited from advances in recreation research; responded to legislative and policy requirements, as well as to increasing recreation demands, impacts, and conflicts; and, recognized the deficiencies of traditional carrying capacity models for recreation management. Further exploration of the underlying epistemological and axiological

foundations of the prominent visitor management frameworks used in North American. The Recreation Opportunity Spectrum, Limits of Acceptable Change, Visitor Impact Management, Visitor Experience Resource Protection, and Visitor Activity Management Process frameworks may help to establish the underlying knowledge claims that are expected to underlie the development of the Recreational Activities Assessment Framework (RAAF).

The Recreational Opportunity Spectrum (ROS) is a process developed by the United States Forest Service as a response to growing recreational demands, increasing conflicts between users and a series of legislative directives that called for an integrated and comprehensive approach to natural resource planning (Nilsen & Tayler, 1998). The strength of the ROS process, as identified by Nilsen and Tayler, is that the framework is practical with principles that force managers to rationalize management from three perspectives, which include protection of the resource, opportunities for public use and the organization's ability to meet preset conditions. Nilsen and Tayler also indicate that the ROS links supply with demand and can be integrated into other processes and ensures that a range of recreation opportunities are provided to the public. The ROS process is primarily concerned with establishing the supply of recreational opportunities and potential for visitor experience. Integration of the ROS principles into the recreational assessment framework may be instrumental in ensuring that a wide variety of recreational opportunities and visitor experiences are provided to the public. A drawback of using the ROS is that the process is essentially conducted internal to the Agency, with minimal input from the public and affected stakeholders and communities. The ROS process is also local context dependent, as it is related specifically to the physical, social and managerial characteristics of the specific area.

The Visitor Impact Management (VIM) framework may be described as an expert knowledge and non-preference-related driven approach to managing recreational activities and their impacts. The focus of VIM is to establish a series of best information and practices and then deriving a set of guidelines concerning decisions regarding a particular activity. The main potential of VIM is in the development and maintenance of scientifically defensible information regarding the positive and negative impacts of activities on the various preference values (e.g., effects of motor boating to remote tourism). Nilsen and Tayler (1998) describe VIM as a flexible process that assesses and identifies existing impacts and particularly their causes and can be applied to a variety of settings. This limits the utilization of the VIM process for assessing potential contributions and drawbacks of new recreation activities. The factors and standards associated with a particular activity and its impacts may also be decontextualised from the specific protected area. Local characteristics and/or conditions may be significantly different from where research on the activity was conducted.

The Limits of Acceptable Change (LAC) framework is a more integrative approach to decision-making. Public involvement is essential in determining the desired outcome or condition of the resource, especially in consideration of social and economic concerns. The inclusion of more social science information has been identified as important to identifying and establishing more defensible norms and social conditions by gaining a more accurate understanding of the preference-related values concerning an individual park. This approach is intended to counter the 'squeakiest wheel' and lead toward a more democratic approach to decision-making.

The Visitor Experience Resource Protection (VERP) is a relatively newer process developed by the U.S. National Park Service specifically for dealing with carrying capacity

issues concerned with ensuring the quality of resources as well as visitor experience (Nilsen & Tayler, 1998). Nilsen and Tayler describe the multi-step process as a prescription for desired future resource and social conditions, while defining appropriate activities and levels of use. The process combines elements of earlier frameworks, specifically the LAC and VIM frameworks, and attempts to prescribe for management and operations planning.

Lastly, the Visitor Activity Management Process (VAMP) is a framework developed by Parks Canada. Similar to VERP, the process is strongly connected to park management planning. VAMP is a comprehensive, hierarchal process that is structured to utilize social science principles and marketing to analyse opportunities and impacts and focus on prescriptive visitor opportunities (Nilsen & Tayler, 1998).

The most pressing needs associated with established frameworks, as identified by Nilsen and Tayler (1998), is the integration of principles among the frameworks and with other planning processes that emphasize ecosystem-based management and an evaluation of their effectiveness, particularly with the profound organizational changes taking place in all protected area agencies. As inferred by Nilsen & Tayler (1998), the application and the ability to monitor the effectiveness of decisions of each framework in different contexts, specifically where potentially new or alternate activities are desired, is a limitation of existing frameworks. Parks Canada has been assessing recreational activities using the above models since the 1980s. Consequently, the development of a *Proposed Framework for Assessing the Appropriateness of Recreation Activities in Protected Heritage Areas* (AAA) was drafted by Parks Canada (1994a) to assist managers in conducting field-level assessments on the appropriateness of an activity occurring in a particular protected area. The AAA framework

is based on the principle that certain 'allowable' activities are appropriate to the setting of protected areas and is intended to support management decisions.

The construction of a new Recreational Activities Assessment Framework (RAAF) is intended to incorporate what has been learned from the previous framework and other experiences. The development of "best practices" methods for recreation management across the system, through the establishment of a functional toolbox, may be used to enhance knowledge exchange between parks. Incorporating such knowledge into the local decision-making process is intended to facilitate a more effective method of understanding the issue and dealing with both recurring and emerging problems. Further examination of the dynamic and often contentious atmosphere of natural and cultural resources management illustrates the necessity for further reflection on how such decisions are derived.

The underlying goals of the identified visitor frameworks illustrate the differences between rational and relational processes to assessing recreational activities and making decisions toward visitor management. ROS and VIM are frameworks that rely heavily on rational knowledge or content as part of the decisions. It may also be suggested that such knowledge foundation has been historically transactive solely within the expert knowledge domain. As such, the appropriate norms and standards are constructed by authorities, professionals and researchers using what are considered to be the best available information to generate a series of best practices. This approach would therefore rely heavily on explicit and shared expert knowledge sources.

Purpose and Significance of the Study

Problem Statement and Central Research Questions

"Planning must integrate scientific information, publicly held knowledge, and the administrative procedures and policies of resource management agencies" (McCool & Guthrie, 2001, p. 310). The integration of such varied and occasionally contrasting knowledge claims and discourses during the decision-making processes can often be problematic. Since human values are an integral part of the decisions concerning ecosystem management, yet the goals and objectives for such actions are often implicit or unclear (Woodley, Kay, & Francis, 1993), the underlying values of such significant decisions need to be identified and expressed. Such understanding may help to provide guidance for rationalizing the decisions made, as well as to offer a greater sense of transparency through the explicit recognition of the desired outcomes to be achieved.

Scientific research on actual planning processes however is difficult, as scientists cannot control the manipulation of variables during the process (Krumpe, 2000). Krumpe suggests that alternative qualitative research methods and case studies be applied to understand such things as the rich interplay of participants, the effectiveness of various public involvement techniques, how tradeoffs are evaluated and how compromises and consensus decisions are made. The purpose of this study therefore is to explore the ranges and discourses between the types of supporting knowledge claims and values that are expressed during the development of the Recreational Activities Assessment Framework (RAAF) by Parks Canada. An exploration of part of the decision-making process for the development of this framework by Parks Canada offers an opportunity to examine how goals and objectives are identified and the mechanisms for achieving those goals and objectives are

determined.

The central research questions therefore of the project are as follows:

1. How is the issue of assessing recreational activities in Canada's national parks, historical sites and marine conservation areas understood by the working group?
2. What are the relationships between such values relative to the mandate and directives of Parks Canada?

Initially this study will identify the various knowledge claims and manifest values expressed by the working group. The process will then explore the continued development of such concepts and criteria as they are expounded through the interactive approach carried out by the working group, in order to assess the planning and managing of recreational activities in Canada's natural and cultural heritage areas.

The second question will explore the relationships between the interpreted themes, as identified through the initial question, and the elements of the Parks Canada mandate. This will provide a better understanding of the knowledge claims and value judgments embedded within the creation of the framework.

Significance of Study

As indicated, the amount and types of knowledge that planners and mangers are required to draw upon is growing and is continually being challenged and updated. Planners are also increasingly being confronted with the question of whose values to represent, while simultaneously pursuing the mandate of the agency and other legislated responsibilities. Planning in the public interest requires the difficult task of balancing both existing and potential interests, while adhering to established strategic directions such as policies,

procedures and regulations. The methods for making decisions and resolving such problems are equally numerous and diverse.

In regards to natural resources, decisions are often made using the best, most appropriate information in the context of a desired outcome. The integration of science (knowledge claims) and politics (values) is often overlooked. Decisions may also be made in isolation of each other with little regard to the larger picture. By examining the decision processes on a more macro scale, broader patterns may be identified in order to gain a better understanding of how decisions contribute to overall goals and objectives. Patterns of value-based judgments, such as scientific and environmental discourses, are also inherent to complex natural resources decision-making. We must acknowledge that such patterns of discourse exist and must understand how each contributes to achieving the overall mandate. Recognizing and acknowledging such patterns may allow people that are not part of the planning group to better understand the rationale behind particular decisions. Knowing how and why decisions are made in the past also helps to facilitate or guide future decisions.

The significance of this study is to develop a straightforward method that explicitly acknowledges the types of values and relationships between the knowledge claims and discourses that are expressed in resolving a complex natural resource problem, such as visitor recreation management in Canada's national parks, historical sites and marine conservation areas. Recognizing what knowledge claims are well established within the decision-making process is important to understanding how the mandate is being achieved or where further focus is required. The scope of this research therefore is not directed toward the interests, beliefs and assumptions of the individuals but to explore the collective knowledge claims, valuations and decisions of the working group.

Limitations of Case Study

The inability to directly observe the proceedings of the two workshops encompassing the scope of this study significantly limited the opportunities for examining the participant interactions within decision-making processes. The data analysed in this study were secondary data, compiled by a consultant in the form of two workshop reports. This limitation to data collection resulted in the inability to utilize discursive analysis techniques through direct observation of the dialogue and discourse. The amount of data collected during the workshops of the RAAF working group is comprehensive; however, due to the generalization of the data compiled, the level of analysis was limited. Distinct statements and concepts within the text of the report cannot be and are not intended to be linked to any individual participants or represented group.

Delimitations of Case Study

The focus of the study was on the collective RAAF working group and not on individual beliefs and assumptions. The purpose of the study was not to evaluate power relationships within the planning group or to make claims on whether or not the process is collaborative. The following study is delimited to the analysis of the two workshop reports and draft framework. Due to universal constraints such as time, money and expertise, a process that is relatively straightforward is recommended. The developed methods are intended to be a pragmatic solution for the analysis of future workshops, conferences and open-houses related to parks and protected areas management.

This case study will outline the issues surrounding the diversity of knowledge claims and values associated with complex decision-making in parks and protected areas and will utilize the proceedings of the RAAF working group in order to examine the various knowledge and value concepts that are part of such a decision-making process. The findings of the study will then be discussed in relation to recognized decision models and recommendations toward future research will be provided.

SCOPING THE ISSUE

Decisions in Natural and Cultural Resources Management

The issues surrounding contemporary natural and cultural resources management have been described as multifaceted (Hetherington et al., 1994), complex (Mills & Clark, 2001), messy (McCool & Guthrie, 2001), and even wicked (Patterson & Williams, 1998). These 'messes' are characterized as an interacting set of sub-problems that cannot be solved independently from one another and often have conflicting goals and scientific disagreement (McCool & Guthrie, 2001). Natural and cultural resources management decisions have also been increasingly scrutinized and actively debated by public and private interests. The technical complexity and social embeddedness of managing such significant areas necessitates the active collaboration of public authorities, Aboriginal peoples, private businesses, scientific experts, social interest groups, non-governmental organizations and representatives of stakeholders (Bouwen & Taillieu, 2004). A shift towards such a relational, transactive approach from the rational, expertise approach to knowledge sharing and management (Brauner & Becker, 2006) is considered as a model for more collaborative decisions being made and actively pursued.

This chapter will outline the complexity of making decisions in regards to parks and protected areas management and will identify some of the knowledge claims and values that have traditionally formed the basis for making those decisions.

Uncertain and Complex Decisions

Planners and managers who are responsible for the management of natural and cultural resources often face difficult decisions. Harrison and Pelletier (2000) argue that there

are essentially two types of decisions made: routine and recurring with a fairly certain outcome (Category I) and non-routine and non-recurring with much uncertainty in the outcome (Category II). Both categories are evident in natural resources management and may require different levels of planning and management. Harrison and Pelletier indicate that Category I decisions make up the vast majority of decisions made by an organization, typically by lower levels of management, and are guided by established policies and procedures. This implies that planners and managers are able to rationalize the significance of the issues and impacts of a proposed activity, including the guiding rules (e.g., policy) and processes (e.g., procedures), required to make an appropriate Category I decision.

Category II decisions however are more complex in nature and are typically made by middle and higher levels of management (Harrison & Pelletier, 2000). The more complex, controversial issues (e.g., building a road through a park) that occur during resource management planning are typical of a Category II decision. Maarlevald and Dangbégnon (1999) describe this dynamic disposition of managing natural resources by stating that "human use changes resource systems; resource systems themselves entail change processes; and, human needs and interests regarding resource systems change" (p.268).

Harrison and Pelletier (2000) identify that problems can be created when Category II decisions are treated as Category I, which underestimates the complexity of the problem and the value of the outcome. In natural resources management the clear line between routine and simple and non-routine and complex issues may not always be evident or may change over time. Such an oversight may be indicative of relying on established precedents or prior findings and not considering important changes to the context of the decision at hand. Consider that recreational activities, visitor experiences or perceptions, and knowledge

associated with those activities may change over time. The main implication of this problem is that planners and managers must be able to recognize issues that are considered to be or become Category II and take appropriate action. Nevertheless, such actions, including the decision to take no action, often have consequences and good information enhances the ability to predict these consequences (Davey, 1998). This suggests that the agency must learn to recognize such problems and be systematic, yet flexible in its approach.

An Adaptive Approach to Management

The acknowledgement of the dynamic attributes of ecological and social systems has brought about a change in the approach to how natural and cultural resources are managed. It is now acknowledged that some forms of past resource management were not as benign as resource professionals once thought (Mills & Clark, 2001). Resource managers, scientists and the general public must learn about the social, biological and physical attributes of ecosystems and adapt more quickly to new knowledge (Lessard, 1998). Learning to manage ecosystems involves "three steps forward, two back, and [sometimes] reinvention of the wheel" (Maarleveld & Dangbégnon, 1999, p. 279). Lessard (1998) also notes that the adaptive management structure itself must be flexible, which includes the organization responsible for implementing the process. The ability to be adaptive is contingent on the organization allowing opportunities for autonomy at the level being managed and recognizing the context in which those decisions are made. The management process must operate strategically, not functionally. Harrison and Pelletier (2000) further state that management decisions and organizations coexist in a reciprocal relationship. This implies that some level of learning must exist within the organization. Treating types of resource use,

policies and management decisions as experiments creates room for systematic learning from experience and change (Maarleveld & Dangbenon, 1999). The environments that we are trying to sustain are much more complex and the end results are much more controversial. A uniform approach therefore is not workable and there needs to be a range of different solutions responding to different environments and to the many different social and cultural contexts (Davey, 1998). This recognition of the complex natural and social systems has led to a movement towards a more flexible, adaptive approach to management.

Adaptive management planning has become a preferred approach to land and resource management (Worboys, Lockwood & DeLacy, 2001), as adaptive management is based on a continually evolving understanding of cause-and-effect relationships in both biological and social systems (Lessard, 1998). Walters and Holling (1990) describe the process as a scientific experiment with clearly stated goals and objectives, initially described hypotheses of ecosystem behaviour, and monitoring to provide feedback to redirect management experiments. Determinations through the process may also be made as to whether or not the strategy or goals need to be adjusted (Lessard, 1998). Nevertheless, the most difficult elements of managing natural and cultural resources are encountered when defining the goals and objectives or 'desired future condition' and when determining how to implement such programs. Defining the problem and subsequently the desired outcome is principally a value-based decision (i.e., what should be done). Such decisions may be made based on the ideological perspective of the individual or group making the decision. Public involvement is therefore a significant component of the adaptive resources management approach, specifically in defining the desired condition or outcome (Lessard, 1998). Implementation strategies are usually based on the best and most appropriate information and

are considered the methods of carrying out the strategy and working to achieve the desired condition (Lessard, 1998). As a result, the synchronization of understanding the problem, determining the desired direction and carrying out the action is therefore fundamental to the success of the decision. Dwyer and Childs (2004) recognize these changing management processes on the landscape, which include conducting adaptive forest management, working collaboratively with diverse landowners and other partners, interacting with citizens on a regular basis, and taking a landscape perspective on natural resources and their management. The consequence is a shift to a more democratic method of resource management at the local level, where affected stakeholders and communities have more direct involvement and are able to contribute to decisions being made.

Protected areas planning and management often involve such multiple-parties, including both public and private interests. The question therefore is what if there are different perspectives and beliefs as to what protected areas are for and, for example, what recreational activities are considered appropriate? The discourses regarding the various desired outcomes being sought (i.e., the objectives and goals of the protected areas system and the individual sites) and the methods of (re)framing the context in which decisions are made and carried out are discussed throughout the paper.

Group Decision-Making: The Roundtable

The ability to measure the quality and success of group decisions is difficult. Brown (2000) acknowledges that to "simply think in terms of outcomes we usually do not have any criteria against which to measure quality. If outcomes are difficult to assess, perhaps it is possible to evaluate the decision-making process that led to those outcomes"(p. 212). Brown

further explores the findings of the study by Janis (1982), where five conditions or features of poor group decisions were developed and the concept of 'groupthink' is initiated. Groups found to make poor quality decisions were found to have the following characteristics:

- the group making the decision was very cohesive;
- the group was insulated from information outside the group;
- the group rarely searched systematically through alternative policy options to appraise their relative merits;
- the group was often under some stress caused by the need to reach a decision urgently; and,
- the group was nearly always dominated by a very directive leader (Brown, 2000, p. 213).

The central concern therefore of complex public decision-making is the 'interdependent' involvement of stakeholders (i.e., perspectives between participants) toward the development of a shared problem definition; the coordination of the different actions on all levels; and the orientation toward a shared common script and action strategy (Bouwen & Taillieu, 2004). Interdependent or social learning requires participants to be able to collaborate with each other to form a common understanding of the problem. This involves acknowledging and accepting that different perspectives or ideologies exist while framing the issue. Fambrough and Comerford (2006) promote a culture of invention based on the experience of many and developed through a continuous process of co-construction. The participants must however be able and willing to openly share information and experiences related to the issue. Fambrough and Comerford (2006) expand on a contextualist theory of group dynamics that promotes pragmatic values of utility and action. Contextualist theory

promotes the paradigmatic shift to a contextualized framework for generating more useful theories and practices of group dynamics and development that include heterogeneity and pluralism and acknowledge the role of power and privilege (Fambrough & Comerford, 2006). The knowledge within such groups is considered as part of a socially constructed process, where the meanings of concepts are derived based on past experiences and understandings, in context to the particular natural and social conditions and elements of the problem or issue being addressed. Similarly, Bouwen and Taillieu (2004) promote such a shift from the 'knowledge-as-substance' paradigm to considering 'knowledge-as-participation', where knowledge is perceived as a socially constructed process that fosters social learning and compromise. "Through sharing problem perspectives and working with different kinds of knowledge and competencies, multiple actors or stakeholder parties co-construct a social learning process in an emerging community of practice (Bouwen & Taillieu, 2004, p.137)".

Knowledge and Values: Integrating Science and Politics in Decision-Making

The following section explores the main discourses related to knowledge and information management, specifically, in relation to the nature of knowledge and its incorporation in protected areas decision making.

Knowledge and Information Management

Philosophical Foundations of Knowledge

As proposed through Laudan's Reticulated Model of Rationality, there are three sets of interrelated normative philosophical commitments to examining paradigms of scientific

research: ontology; epistemology; and axiology (Patterson & Williams, 1998). Ontology refers to the normative commitments about the nature of reality, human nature and the nature of human experience. Epistemology refers to the methods, limits and nature of human knowledge. Axiology refers to goals underlying a particular approach to science (Patterson & Williams, 1998). Is there only one single 'truth' to the universe, in which pieces of information are collected in order complete our best understanding of it; or, are there multiple 'truths' to the universe, in which understanding is only relevant within a particular context because conditions, trends and values change? Patterson and Williams claim that understanding the nature and implications of contrasting ontological commitments (i.e., rationalist versus relativist) underlying such paradigms is a necessary step to understanding and responding to challenges posed by complex problems. Respectfully, identifying and acknowledging the existence of both rationalist and relativist perspectives within diverse protected areas planning groups may help to achieve a more transactive approach to group understanding.

Rational knowledge.

The knowledge-as-substance axiom considers knowledge as content, a thing that may be collected and transferred from one container or mind to another (Bouwen & Taillieu, 2004). This is reflective of the rationalist or foundationalist perspective of knowledge (Patterson & Williams, 1998). Patterson and Williams describe this as a linear process that yields the answer and is usually in the form of generalizable laws. Useful knowledge is formal and systematic, following codified procedures and universal principles (Nonaka &Takeuchi, 1995). This form of knowledge is typical of past research and what is considered positivist science (Williams & Patterson, 1998).

Relational knowledge.

The knowledge-as-participation axiom conceives knowledge as being formed through interaction (Bouwen & Taillieu, 2004). Knowledge is socially constructed through collaboration. This approach is representative of the relativist or anti-foundationalist knowledge claims. Knowledge-as-participation or relational knowledge is representative of interpretivist science (Williams & Patterson, 1998), which advocates understanding through communication and the social construction of knowledge. Bouwen and Taillieu (2004) also promote such interdependence as the mutually accepted way of interacting among the parties with the recognition of each other's perspective, interest, contribution and identity.

Mills and Clark (2001) contend that scientific work during resource management decision making is often restricted to the synthesis of available information. As such, the information may be outdated or incomplete. The information may also be decontextualized (Lee & Roth, 2006) and may not be well suited for the current situation. The communication of scientific information is also a complex challenge because it involves knowledge sharing and exchanges amongst a wide range of disciplines and actors (Quevauviller et al., 2005), where such scientific information may be rushed and may require interpretation by people with non-technical backgrounds (Jasanoff, 1990; Krumpe, 2000).

Fambrough and Comerford (2006) illustrate the epistemological advantages of adopting a contextualist approach (i.e., knowledge is relative to the context in which it is formed) instead of an organicist approach (i.e., knowledge is built and transformed as new information is identified) to understanding the world and the utilization of knowledge. The purpose of contextualism is decidedly pragmatic and is based on sense-making, as to improve invention and practice (Fambrough & Comerford, 2006). The result is the acceptance of

interdependent or different complementary contributions toward a common pattern of action (Bouwen & Taillieu, 2004), such as the planning and management of protected areas.

Creating and Transferring Knowledge

Technological advances, specifically the development and function of computers and the internet, have allowed people to process and share information more quickly and efficiently with the utilization of available information or content being the focus (Snowden, 2002). A problem with operating in such a utilitarian manner however does not recognize the value of the knowledge gained through experience and through traditional forms of knowledge transfer such as apprentice schemes (Snowden, 2002). If knowledge is considered as a thing or simply regarded as content, absolute and awaiting discovery, then the importance of individual experiences and perspectives in decision making is negligible. What such a positivistic approach does not recognize is that both natural and social systems change and that not all held information and knowledge is explicit. As such, there is a need to consider context and narrative rather than solely content. Patterson and Williams (1998) describe this as a hermeneutic circle, where the understanding is an expression of what is known at the moment but is subject to revision as the knowledge is both contextual and time bound. Properly understood knowledge is both a 'thing' and a 'flow' (Snowden, 2002), as it is constantly being created, transferred and destroyed by people within diverse social contexts. This is best reflected by Davenport and Prusak (2000) who propose that knowledge is:

> "A fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new

> experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organized routines, processes, practices, and norms (p. 137)."

Continually assessing what we know and how we achieve such understanding is part of learning. Learning is multidimensional and, in relation to natural and cultural resource management, involves an enhanced understanding of ecological and social system functions and processes, comprehension of required legal and policy processes, and more personal dimensions dealing with the values, beliefs and interests of all participants (McCool & Guthrie, 2001). Such relationships between science, policy and experience have not been well documented, especially within the complex and evolving field of natural and cultural resource management in protected areas.

Snowden (2002) postulates three heuristics about the utilization and expression of knowledge: knowledge can only be volunteered and cannot be conscripted; we can always know more than we can tell and we will always tell more than we can write down; and, we only know what we know when we need to know it. Exploring these principles of knowledge expression, a number of suppositions can be made. In regards to the first proposition, short of being able to 'read the minds' of participants, it should be assumed that what a person chooses to communicate to a group is an articulation or action of either what they believe to be right or true or what they wish to disclose or express, including the choice of not communicating at all. Second, open communication within a group fosters the reflection and articulation of knowledge. Through dialogue, individuals seek to inquire, share meanings, understand complex issues, and uncover their assumptions (Preskill & Torres, 1999). Wegner

similarly proposes that people create knowledge by engaging in joint action as forms of participation in a community of practice (from Bouwen & Taillieu, 2004). Lastly, we typically reflect on what we know only when confronted with a question or problem. This is an important notion when considering the five main skills required for a learning organization, as proposed by Garvin (1993): systematic problem-solving; experimenting with new approaches; learning from own experience and history; learning from other's experience and history; and, transferring knowledge quickly through the organization. The implication of these three postulations toward knowledge management in protected areas planning is the acknowledgement of the significant role of social learning (Bouwen & Taillieu, 2004).

Much of the knowledge that is within government agencies responsible for the planning and management of natural and cultural resources is explicit through their management plans, strategies and other documents. There is however also much tacit, anecdotal and experiential knowledge (Krumpe, 2000) generated during planning and management decision processes that are not typically incorporated into written plans and documents. Furthermore, every planner and manager within the field of protected areas management also has their own personal strengths and weaknesses. Each also has their own educational and experiential background. For example, one planner may have specialized education in ecology and natural sciences, while another planner has extensive experience in urban and rural planning. Government agencies, such as Parks Canada, rely upon such diverse expertise amongst their personnel. This is principally due to the complexity of issues and the necessity for expert knowledge utilized in the intricate decision-making process.

The lack of a clear coordination mechanism to communicate research between planners and managers may also lead to relevant scientific research not being used or even simply

known by policy-makers, as well as to research needs not being communicated effectively to the scientific communities (Quevauviller et al., 2005). The Panel on the Ecological Integrity of Canada's National Parks and Parks Canada (Parks Canada, 2000) has recognized the importance of developing sound scientific practice and expertise at all levels of the agency. Planners and managers must be able to properly access, interpret and utilize the building scientific-knowledge base. Correspondingly, planners and managers must also be able to adequately extend what research needs to be addressed to the academic and research communities. International, national and provincial/territorial symposiums, conferences and research forums have been developed to foster such knowledge and value exchange. These include the *International Symposium on Conserving Cultural and Biological Diversity: The Role of Sacred Natural Sites and Cultural Landscapes*; *Science and Management of Protected Areas Association* (SAMPAA); and, the *Parks Research Forum of Ontario* (PRFO). Such workshops have helped non-government and interest groups, academic researchers, and government planners and managers to come together and share contemporary ideas on what parks and protected areas, as well as how they may be planned and managed.

Recognizing the nature of such knowledge creation and transfer is significant to understanding the importance of effective communication and social learning. As a result, a collaborative process of respectful dialogue must be promoted and the integration and clarification of knowledge and values within the collective understanding of the problem is recommended.

Expertise: A Knowledge Discourse

So, what constitutes good information? Mills & Clark (2001) contend that science can effectively contribute to resolving natural resource management issues and discover new opportunities. Although Krumpe (2000) proposes such uses for science specifically to wilderness planning, the contribution of science to information and knowledge management and planning may be adapted to consider the broader fields of natural and cultural resources management. The initial part of the park planning process, for example, relies on science to identify areas that have a good representation of the wildlife, vegetation, geology and landforms that characterize a natural region (Davey, 1998). There must be a clear understanding however of the different roles that science and management can play in natural resource decision-making (Shaw, Everest, & Swanston, 2000). The role of science in natural and cultural resource planning and management may be considered to have intensified over time and has increasingly become relied upon for making decisions. Krumpe (2000) suggests that science can effectively contribute to planning initiatives by addressing a number of specific elements of the processes identified in Table 1, Roles for Science in Ecosystem Planning. This is due to the perception that good information can improve the quality of decision-making (Davey, 1998). Accepting that science plays a role in making decisions, it must also be recognized that science is not intended to directing decisions. This is an important distinction that will be explored further in the following chapters.

Roles for Science in Ecosystem Planning

Inventory and Description
- The best science and newest techniques and protocols should be used to conduct better inventories, surveys, and collections methodology.

Problem Detection
- A key role in identifying the presence and direction of change in biophysical and social conditions.

Research on Cause and Effect
- Research on behaviours and conditions that augment or suppress impacts to natural and social conditions.

Understanding the Limitations of Data
- Educating the public, managers and planners on how to interpret the data and how to understand the limitations of the data, with an emphasis on enhancing knowledge of the sampling and research methodology.

Development of Monitoring Protocols
- Explain the methods, sampling schemes and collection protocols used to collect any data provided to planners and managers.
- Conduct research specifically aimed at testing and improving protocols for monitoring biophysical and social conditions, with the direction of simplifying the process, as much as possible, to encourage proper continuance of the procedures by field managers.

Development of Long-term Databases
- Inability of managers to develop, maintain and utilize long-term databases, due to constraints related to budget, personnel and training.

Search for Key Ecosystem Indicators
- Identification of sensitive species or ecosystem characteristics to detect changes in natural conditions, especially indicator s that are responsive to human use.

Search for Robust Social Indicators
- Identification of human and natural factors that contribute to or deteriorate the experience of users.

Assist in Monitoring the Effectiveness of Various Management Practices
- Application of scientific methods to measure the effectiveness of management decisions.

Evaluation of the Effectiveness of Different Planning Processes
- Planners and managers continue to explore methods for conducting planning processes; such cases should be considered as field experiments and be evaluated to determine their effectiveness.

Case Study Research on Different Wilderness Planning Applications
- Alternative qualitative methods and case studies to explore various planning initiatives.

Move from Anecdotal Descriptions to Comparative Analyses and Hypotheses Testing
- Much knowledge in the literature consists of anecdotal descriptions and discussions.
- Compare similar or different planning processes to gain a more comprehensive understanding of certain conditions or circumstances that contribute to successful planning programs.

Table1: Elements of planning processes related to natural and cultural resources management that may be enhanced through science. (Source: adapted from Krumpe, 2000).

Natural and social sciences.

Natural science refers to the theory and research that has been applied to park management from disciplines such as ecology, geology, geomorphology, limnology, and forestry. Natural science intends to answer questions related to biotic and abiotic processes on the landscape. Natural sciences operate on the basis of a cause-and-effect, deterministic model, and that model is often applied to human beings as well as to plants and inanimate objects (Babbie, 1998). An example of this is the study of trail erosion. A number of factors can be identified that lead to trail erosion, such as vegetation and soil type or type and amount of visitor activity. For the most part, we accept that deterministic model as appropriate in such cases and recognize that our free will is limited by certain constraints.

The single greatest threat to ecological integrity, as proposed by Dearden and Rollins (2002), is human use. Similarly, one of the greatest concerns to visitor experience is conflict between visitors, such as perceptions of crowding and incompatible activities. Social science refers to the theory and research that has been applied to park management from disciplines such as sociology, psychology, geography, economics, tourism, and leisure studies (Rollins & Robinson, 2002). Rollins and Robinson propose a number of significant questions that social science is intended to explore, in relation to visitation, recreation and human use management within protected areas. These include: why do people seek out certain places; what kind of activities do they pursue; what benefits flow from these experiences; what kinds of environmental impacts do visitors create; what ways do visitors contribute to or detract from the environmental sustainability of parks; what types of visitor services and facilities are desired or appropriate; what types of experiences will or will not be permitted in park settings; what conflicts occur between different user groups and why; to what extent are

people willing to pay for parks through taxes and user fees; and, how much public support exists for protected landscapes compared to their use for other purposes, such as logging or urban development?

The capacity to develop an understanding of these significant questions and intentions for integrating such knowledge into human use management is critical. As Payne (2000) reports, an improved social science capacity and a consistent, coordinated long term direction for social science research will be essential to manage human use more effectively.

Expertise in the Decision Process

Since we are typically dealing with such uncertainty when making decisions on resources management, scientists can provide managers and policy-makers with the foundational information for reasoned decisions, but policy considerations, not science, usually dictate the decisions (Shaw et al., 2000). This may be attributed to the perception that scientific organizations and researchers are poorly suited to the formulation of policies in the 'light of politics' (Collingridge & Reeve, 1986), as political controversy is an inherent part of the science-policy interface (Mills & Clark, 2001). The collection of vested interests must be weighed and the reality is that science may or may not play a vital role. The role of 'expertise' (Carolan, 2006; Lee & Roth, 2006) in the decision-making process may be said to provide a better understanding of the relationship between what knowledge is considered 'fact' and what is considered 'value'. There are three types of expertise that can be attributed to the environmental sciences: no expertise; contributory expertise; and, interactional expertise (Carolan, 2006). No expertise is considered a degree of expertise insufficient to engage in an even cursory discussion of the topic in question (Carolan, 2006). This may best

be exemplified by persons in a participatory position that have minimal understanding and experience with a particular topic of discussion (e.g., assessing spiritual significance of a site). Contributory expertise is expressed as enough expertise to contribute to the knowledge base of the topic in question, noting that such cognitive authority can come in the form of either abstract/generalizable or local/practical knowledge (Carolan, 2006). This type or level of knowledge recognizes the importance of both authoritative and lay knowledge, as a contribution to expert knowledge. Abstract or generalizable knowledge may be expressed as decontextualized research methods and findings. Local or practical knowledge has significance in understanding local natural and social contexts. Interactional expertise is a form of expertise that rests on having contributory expertise in the form of either abstract/generalizable or local/practical knowledge while also having enough expertise to interact interestingly with those who possess contributory expertise of the other form, thus allowing for important interactions to occur between the two (Carolan, 2006). This type of expertise is considered as essential for having effective communication, both recognition and acceptance, between the different knowledge claims. Interactional expertise may best be in the form of planners at the different levels, who are typically in position between those doing generalized research and studies (e.g., academics and government research departments) and those with practical experience with application and operation (e.g., local community and park managers). Caralon (2006) however argues that citizens, not professional scientists, have been required to develop interactional expertise, in order to have their opinions and accompanying data accepted by the larger scientific community.

Future circumstances are generally considered as somehow a caused condition by present ones and that we undertake the task of predicting our future circumstances through

causal and probablistic reasoning (Babbie, 1998). Babbie recognizes that such patterns of cause-and-effect relationships are considered probalistic in nature and that science makes them more explicit and provides techniques for dealing with them more rigorously than causal human inquiry. Conversely, the practice of objective science is thought to be unequipped to deal with any intermingling of fact and values and, as such, is unprepared as a knowledge system for many of today's environmental problems (Carolan, 2006). Carolan attributes this to the notion that in the face of uncertain, complex questions, scientific ways of knowing break down and require scientists to look beyond "the facts" to make determinations. The contextualization or decontextualization of scientific knowledge (Lee & Roth, 2006) also should be recognized and acknowledged in relation to the decision. Lee and Roth suggest that science and scientific knowledge are relativized when brought into the public, where there are other forms of knowing and knowledge that can be brought to bear on contentious issues.

Babbie (1998) also argues that all of our experiences are inescapably subjective, as you can only see through your own eyes and anything peculiar to your eyes will shape what you see. Objectivity is a conceptual attempt to get beyond our individual views and is ultimately a matter of communication. As people attempt to find a common ground in our subjective experiences whenever we succeed in our search we say we are dealing with objective reality or agreement to reality. Objectivity therefore is directly related to the group or authorities that agree with a particular method for how the decision was made (Babbie, 1998). If the basis of knowledge is agreement (i.e., what is considered to be the truth) and because everything an individual needs to know cannot be learnt through direct personal experience and discovery (Babbie, 1998), the transfer and acceptance of knowledge must

occur. Such knowledge is developed and transferred either through traditional or expert means (Babbie, 1998). Three main discourses of knowledge therefore can be identified: authoritative or expert knowledge; traditional knowledge; and ordinary human inquiry [local knowledge] (Babbie, 1998).

Expert knowledge claims: Authoritative, professional and academic knowledge.

Babbie (1998) recognizes that the public is right to trust in the judgment of the person who has special training, expertise, and credentials in a given matter, especially in the face of controversy. At the same time however, inquiry can be greatly hindered by the legitimate authority who errors within his or her own special province (Babbie, 1998). For example, a biologist may make mistakes in the field of biology and even biological knowledge may change over time. Inquiry may also be hindered when dependence on the authority of experts speaking outside the realm of their experience occurs (Babbie, 1998). Importance must therefore be placed on understanding the context of such knowledge and what is considered to be the 'best' available knowledge.

Lay knowledge claims: Local and traditional knowledge.

Each individual inherits a culture made up, in part, of firmly accepted knowledge about the workings of the world (Babbie, 1998). Such knowledge is referred to as common knowledge and is typically something that "everyone knows". Common knowledge is cumulative and, as an inherited body of information and understanding, is the jumping off point for the development of more knowledge (Babbie, 1998). Wells, Brandon, and Hannah (1992) state that understanding the complex and variable relationships between the protected areas and their local communities require a site-specific analysis. Wells et al.'s reference is made particularly to any threats to the protected area posed by local people's activities. The

utilization of public familiarity and knowledge of local natural and cultural features and landscapes is growing. As local communities and interest groups become more involved within protected are planning processes, there may be opportunities for collaboration and partnership which will foster a significant exchange of knowledge and information. Local communities are typically the primary users of many protected areas and often present the most significant challenges to management. Inclusion of local communities input into natural and social science research may also help to foster communication and understanding.

The inclusion of traditional forms of knowledge held by Aboriginal communities has been congruent with the inclusion of Aboriginal communities in the identification, planning and management of protected areas. An example of a program that has been created within Canada is the Whitefeather Initiative by the Pikangikum First Nation in Northwestern Ontario. The Initiative brings together community-led economic renewal strategies for Pikangikum First Nation, providing urgently needed employment for Pikangikum people through tribal enterprise; the conservation of the biodiversity and resource abundance of the boreal forest, protected and enhanced by the people of Pikangikum First Nation since time immemorial; a win-win partnerships led by Pikangikum First Nation, building consensus and harmonizing interests around key resource development issues; and the best of local Indigenous Knowledge and western science to develop innovative, "state of the art" planning and management tools (Whitefeather, 2007). Objectives toward co-management involving First Nations is considered by Sherry and Myers (2002) to be distant unless negative preconceptions of traditional environmental knowledge and management systems are dispelled specifically by the primitive technology myth (i.e., technological inferior techniques), the indiscriminate harvesting myth (i.e., lack of commitment to sustainability);

and the "disappearing Indian" myth (i.e., loss of traditional practice). Simply, the knowledge passed down through generations should not be depreciated or dismissed based on cultural biases and differing perspectives of knowledge.

The dynamic complexity for understanding issues, including the involvement of partners, stakeholders, academics and public individuals in providing a wide knowledge base, offers opportunities for unique and inclusive input for making decisions. This participatory approach to public or stakeholder involvement in decision process recognizes the importance to establishing a common understanding of such complex problems and a collaborative commitment to a solution. The difficulty however lies in the ability to recognize the range of values that those contributors have toward parks and protected areas and how they may guide judgements on what needs to be achieved.

Values in Protected Areas Planning and Management Decision-Making

Parks and protected areas have a wide variety of values associated with them, which continue to be identified and studied by park agencies and academic institutions (Dearden & Rollins, 2002; Woodley, Kay, & Francis, 1993). Accordingly, what are protected areas for, what should they be for and how should they be managed? Examining these questions is important to understanding the context in which decisions are made.

Integration of Multiple-values

The multiple-values associated with protected areas management is reflected in the International Union for the Conservation of Nature's (IUCN) definition: Parks are considered

as a clearly defined geographical space, recognized, dedicated and managed, though legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (Dudley, 2008).

Canadians recognize the importance of integrating multiple objectives for protected areas, as public opinion data consistently demonstrates that Canadians place a high value on the principles of environmental protection and conservation and that economic prosperity and environmental protection are complimentary objectives that should be pursued concurrently (Parks Canada, 2006a).

To ensure the integration of multiple values, Canada has adopted a systems planning approach to protected areas management. The advantage of systems planning is that it offers a more practical way of putting protected areas management into a wider context (Davey, 1998). Davey suggests that by switching the focus from individual protected areas to looking at the relationships between them, and putting the whole protected area network into its broader context, system planning provides the means for ensuring that the total significance and effectiveness of a nationally protected areas system is much more than the sum of the parts. The requirements of such systems planning are outlined through the Convention on Biological Diversity:

- Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- Develop, where necessary, guidelines for the selection, establishment and management of protected areas where special measures need to be taken to conserve biological diversity (Glowka et al., 1994).

Davey (1998) further proposes five key characteristics of a system of protected areas:

representativeness, comprehensiveness and balance; adequacy; coherence and complimentarity; consistency; and, cost effectiveness, efficiency and equity. Davey acknowledges that factors of the planning process become increasing difficult to measure objectively, such as competing land and resource uses and impacts on the social and economic life of the communities being affected.

Values cannot be directly observed but are inferred from individual and collective behaviours and, according to Brown, in relation to natural and cultural resources management they may be divided into two categories: non-preference–related values and preference-related values (cited by Herrington et al., 1994). Scientific understanding of both facts (non-preference-related values) and values (i.e., preference-related values) provide the appropriate empirical base for effective natural resource management decisions and policies (Hetherington et al., 1994).

Non-preference-related Values

According to Toothman (1996), a park or protected area can be considered to have established an appropriate balance in its resource management program when:

- A plan exists to identify and evaluate, using professionally and nationally recognized criteria and contexts, all natural and cultural resources within the park's boundaries;
- The need to manage these resources in accordance with laws, regulations and policies, and professionally accepted standards is recognized as the park's primary mission;
- Staff and budgetary support to manage these resources are sought and allocated according to objective measures of needs and workloads; and,

- All park management decisions affecting natural or cultural resources take the significance and requirements of these resources into account as integral parts of the decision-making process.

Representational values.

The system plan adopted by Parks Canada is based on the fundamental principle of protecting an outstanding representative example of each of Canada's landscapes (Davey, 1998). Davey suggests that system planning is an organized approach to macro-level planning and builds on existing knowledge and approaches. Hetherington et al. (1994) do not consider the representational concept of value, in relation to human use values, as relevant to natural resource management and policy. Contrary to Hetherington, representational values may however be quite relevant within a systems and roundtable planning approach. By switching the focus from individual protected areas to looking at the relationships between them, and putting the whole protected area network into its broader context, system planning provides the means for ensuring that the total significance and effectiveness of a national protected areas system is much more than the sum of the parts (Davey, 1998). The relational value of a feature may hold significant weight when making decisions regarding the disposition of a resource. In terms of protected areas management, protected areas are best selected based on the composition and quality of the resources. Such areas that are considered the 'best' representation or 'unique' context of a particular species, landform or landscape are then sought after for protected areas status. The inadequacy of some protected area systems however is that in some parts of the world, existing protected area systems give too much attention to charismatic fauna, or spectacular scenery, and not enough to covering

the full suite of plant and animal species which are characteristic of particular ecological zones (Davey, 1998).

Canadians have built an internationally renowned network of 42 national parks, which represents 39 distinct natural regions based on physiography and vegetation, 917 national historic sites, two national marine conservation areas and 13 world heritage sites (Parks Canada, 2006a). Although representation applies particularly to the biodiversity of the country, at relevant levels such as genetic, species and habitat, representation should also apply to other features such as landform types and to cultural landscapes (Davey, 1998).

Parks Canada (2006) proclaims that national historic sites mark the vital achievements, triumphs and tragedies of Canada and reflect who we are by chronicling the human determination and ingenuity which have shaped the nation. Similarly, national marine conservation areas (NMCA) have also been initiated as a means for creating a system of conservation areas that are representative of the Pacific, Atlantic and Arctic oceans and Great Lakes (Parks Canada, 2006a) surrounding Canada.

Obligatory values.

Obligatory values (Hetherington et al., 1994) are associated with the laws, regulations, policies and procedures that have been established through normative behaviours and aggregate practice. Since the creation of parks and protected areas, Canadians have continued to define what parks are for and what should or should not be allowed to occur.

The *Rocky Mountain Parks Act* of 1887 and the *National Parks Act* of 1930 are early examples of protected area legislation in Canada. The initial purpose of national parks was to be a dedication by the Parliament of Canada to the people of Canada for their benefit, education and enjoyment and that parks be maintained and made use of so as to leave them

unimpaired for future generations. This goal has been recognized as having an important role in the life of our country and the lives of individual Canadians, including what we value as a country and what we stand for as Canadians (Parks Canada, 2006a). Similarly, the *Historic Sites and Monuments Act* of 1953 was enacted to reflect the support of Canadians, after the Second World War, in providing the statutory authority for the designation of national historic sites, as well as a legislative basis for acquiring or contributing directly to the care and preservation of those sites (Parks Canada, 2006a). The *Canada National Marine Conservation Areas Act* in 2002 was developed with the understanding that these areas would be models for sustainable use.

The establishment of a park or protected area may alone constitute certain obligations under associated legislation and policies, which may include particular objectives (e.g., interpretation) or restrictions (e.g., industrial development). Dearden & Rollins (2002) claim that parks are created in order to retain certain values in the landscape that otherwise might not survive due to dominance of market evaluations in resource allocation. The identification, selection and establishment of new national parks can be a long and complex process and their boundaries often reflect considerations of sovereignty, governance and tenure and should, therefore, be planned and managed in coordination with other areas and not in isolation (Davey, 1998). As such, natural resource protection measures sometimes appear inflexible, and do not necessarily promote a sense of responsibility among local communities (Davey, 1998). Davey therefore suggests that there may be alternative methods to ensure sustainable development, including the establishment or re-designation of protected areas (e.g., IUCN Category V or VI) that allow for sustainable harvesting. The establishment of National Marine Conservation Areas exemplifies this concept, as the primary goal is

typically the sustainable development of the resources by local communities.

Functional values.

Functional values (Hetherington et al., 1994) refer to the technical interrelationships between biological and/or physical entities, as defined through science and independent from individual preferences or social norms. Halvorson (1996) identifies five levels for which conservation can protect biodiversity: genetic diversity, genetic variability within a taxon; species diversity, number of species per unit area; community diversity, number of ecological communities within a geographic area; trophic diversity, complexity of system organization; and, keystone species, significance of a single-species to the overall system.

Nelson (1993) also identifies twelve functions of national parks and protected areas as part of national conservation strategies, which includes functions or roles such as areas for research and monitoring of environmental changes or stresses (e.g., acid rain); for protection of urban heritage resources (e.g., rare or sensitive species); and, for inclusion as part of a more comprehensive sustainable development strategy (e.g., ecosystem management). In other words, protected areas can serve particular functions within ecological, cultural and managerial systems. With respect to protected areas in Canada, functional values may best be reflected by the integrity of the natural and cultural resources.

Under the *National Parks Act* (Parks Canada, 2006a), ecological integrity refers to a condition that is determined to be characteristic of its natural region and is likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes. Functional values in these cases are associated with sensitive or rare biological or physical units and processes that are *identified* as being vital to the integrity of the ecosystem. Functional values (non-preference-

related) need to be acknowledged as being separate from protection values (preference-related), where particular species or features are *selected* and given special attention because they may fulfill other stewardship-related objectives such as for education or tourism (e.g., polar bears and global warming).

Operational values.

As discussed by Davey (1998), protected areas organizations need to be fiscally responsible and need to ensure that public dollars are spent wisely. Managers need to prepare business plans for parks and reserves by assessing and capturing potential benefits in order to ensure the long-term financial sustainability of protected areas in their care (Task Force, 1998). Important considerations to budget and personnel decisions, including infrastructure, staff, and equipment related to ongoing management of sites, are required to effectively monitor, maintain or improve natural and social conditions and to provide essential park services and programs (Toothman, 1996). Toothman further suggests that the most important and persistent problem facing protected areas is the lack of sufficient resources to carry out recommendations for staffing and funding increases. Recognizing such constraints to operational objectives, the costs and benefits associated with financial values are of increasing significance when making decisions.

Similarly, Pearce and Moran (1994) claim that values of biodiversity and conservation activity can be captured and, once captured, change the basis for economic decisions. Ecosystems are valued because of certain features they contain or functions they serve (Woodley, Kay, & Francis, 1993). Understanding the biodiversity values within a protected area and how they may be affected may be indicative of certain activities or practices. Identification of key species and sites, associated with such significant natural and cultural

landscapes, is also important for potential research and/or utilization benefits.

Preference-related Values

Preference-related values are the desired qualities or conditions, underlining the expressed preferences of an individual or group and are observable through assigned values relative to other objects, concepts or activities (as cited by Hetherington et al., 1994). Brown identified in his 1984 study two types of values related to preference: held values and assigned values (as cited in Hetherington et al., 1994). Held values include desirable modes of conduct, end-states of existence, or qualities, and they conceptually underlie all expressed preferences (Hetherington, et al., 1994). A held value relative to parks may be absence of human activity and it's affect on wilderness experiences. Some people may hold parks as areas where there is an opportunity to experience feelings of solitude and connections with nature. Brown also identified assigned values as the expressed importance or worth of an object to an individual or group within a given context (as cited in Hetherington et al., 1994). Utilizing the previous example, certain parks may provide better opportunities or experiences and therefore be ranked higher.

Environmental values: A political discourse

The IUCN (Task Force, 1998) recognizes the debate over environmental protection as between leaving areas in their natural or near-natural state, and developing and exploiting them. Nygren (1998) proposes, in a study on the political and social discourses related to environmental and sustainable development in Costa Rica, that there are four dominant kinds of ideologies that encompass environmental sustainability: environmentalism for nature; environmentalism for profit; environmentalism for the people; and, alternative

environmentalism. A fifth discourse for environmentalism that is gaining a renewed sense of recognition is the sustainability of recreation opportunity and experience. The understanding of recreation and visitor experience has been traditionally considered as more of a by-product of natural and cultural features. Social science research however has demonstrated that people vary considerably in their motivations, and their preferences for different activities and setting (Rollins and Robinson, 2002). As such, it is important to consider the variety of recreational opportunities and experiences that exist throughout Canada's protected areas.

With some adaptation to their context, such ideologies may be used to encapsulate the various perspectives and assigned values that guide decision-making for protected areas. Recognizing the ideological perspectives that are part of the discourse is essential to understanding what values are incorporated into the decision. A particular perspective may be dominant for a specific area or there may be multiple-perspectives on what is intended to be accomplished.

Environmentalism for nature: Stewardship value.

Environmentalism for nature is based on the importance to humans of maintaining a healthy natural environment, as well as protecting the intrinsic value of ecological systems and species (Nygren, 1998). Preservation or conservation of key species is the primary objective associated with the environmentalism for nature valuation. Whether the desired outcome is simply the intrinsic value of a species or future utilization of a resource, protected areas hold a significant benefit toward ensuring the continued existence of key species through a culture of protection.

Environmentalism for profit: Economic value.

Environmentalism for profit recognizes the necessity of natural and cultural resources

to the sustainable development of tourism and other economic opportunities (Nygren, 1998). The difficulty with parks is that many of the important personal values associated with them (e.g., learning, beauty, recreation and spirituality) are unable to compete effectively in the market place, in comparison to more immediate revenues from material gains (Dearden & Rollins, 2002). Recognition of a broader total economic valuation of natural assets can be instrumental in altering decisions about their use, particularly in investment and land-use decisions which present a clear choice between destruction and conservation (Pearce & Moran, 1994). Furthermore, when most of the revenue stays in the local area, this substantially increases the incentives for species and habitat management on the part of local people and helps address their economic and social needs, which are inevitably dependent on the sustainability of development (Davey, 1998). Investment in protected areas can provide a significant benefit to national and local communities, through opportunities for sustainable industries and generation of financial returns (Task Force, 1998). Parks Canada (2006) reflects this commitment to newer public policies that pay greater attention to the importance of natural capital theories; which argue for greater consideration of natural capital factors in public discourse and acknowledge that Canada's long-term prosperity depends upon finding a balance among produced, human and natural capital.

Environmentalism for the people: Cultural and educational value.

Environmentalism for the people (Nygren, 1998) acknowledges the importance of significant natural and cultural heritage areas to a country's historical and social fabric. Parks Canada (2006) embraces the view that Canada's multicultural society is a valued reality and strives to foster an understanding and celebration of diversity while promoting common values related to the protection of natural and cultural heritage. The Commissioner of the

Environment and Sustainable Development (2005c) states that enhancing public education and visitor experience is fundamental to maintaining and restoring ecological integrity. The maintenance of commemorative integrity, the potential for communicating important park messages regarding cultural heritage of the landscape, and the promotion of stewardship and conservation are examples of some of the primary goals related to the cultural significance of protected areas.

Alternative environmentalism: Spiritual value.

Alternative environmentalism (Nygren, 1998) recognizes the spiritual significance of special areas to local communities and Aboriginal peoples. The spiritual significance of certain places is strong and often the reason why many people choose to visit them. In the past, expropriation of Aboriginal and local communities from the areas of protection and not allowing the practice of traditional activities was a common practice throughout the world. Contemporary protected areas research, planning, and management however recognize the importance or 'sense of place' that local peoples often have with significant features and landscapes.

Environmentalism for appreciation: Experience and recreational value.

As described earlier, protected areas in Canada were initially created, planned and managed for the recreational use by all Canadians. Parks Canada (2005a) reaffirms this commitment by stating that the services, facilities and programs offered at national parks, national historic sites and national marine conservation areas are to provide opportunities to enjoy and appreciate Canada's natural and cultural heritage. The Commissioner of the Environment and Sustainable Development (Parks Canada, 2005c) confirmed the need for a more integrated approach to developing a culture of conservation and facilitating meaningful

experiences. Experiences gained through visits to Canada's protected areas provide visitors with a clear and strong sense of Canada, adding to the well-being and health of all Canadians (Parks Canada, 2005a).

Valuation of a Protected Area

The IUCN (Task Force, 1998) assigns values into two categories: use values and non-use values. The IUCN further classifies use values into direct values (e.g., recreation and research), indirect values (e.g., watershed and habitat protection) and options values (e.g., future considerations for use); as well as, non-use values into bequest values (e.g., for future generations) and existence values (e.g., maintaining ecological and cultural heritage). Protected areas provide natural services, such as habitat for insects which pollinate local crops or for raptors which control rodent populations (Task Force, 1998). Indirect uses are largely comprised of the protected area's ecological functions such as watershed protection, breeding habitat for migratory species, climatic stabilization and carbon sequestration. The sum of these use and non-use values is referred to as the total economic valuation (TEV) for the protected area and is considered as a more comprehensive approach to valuation than a mere financial analysis, which measures the flow only of money through a protected area (Task Force, 1998).

External markets are also considered when assessing the economic value of a protected area. TEV identifies the goods and services or 'products' protected areas offer and which are suitable for capturing revenues for the protected area (Task Force, 1998). Examples of such products include opportunities for recreational activities such as rock-climbing. Where the discourse lies is between whether the product, and resources related to

the product, is best suited for non-extractive or extractive uses, or both. Competition over how resources are used or not used is a significant part of natural and cultural resource management, especially when considering protected areas. The importance value of an object, the height of a rock bluff for example, may hold significant value to different individuals and groups. Rock-climbing groups may have interest in protecting rock faces that provide a wide-selection of routes for climbing. An environmental protection group may select a low series of bluffs that provide critical habitat for a sensitive species of moss. A tourism operator may want high, over-hanging rock faces that provide excellent photo opportunities and viewscapes for tourism purposes. A park planner may wish to follow the suggestion of the expert geologist to protect an excellent example of a cirque formation, which provides opportunities for study and education on unique deglaciation processes. A local First Nations community may also express interest because of a traditional and sacred connection with the site. Regardless, without proper planning and management to ensure a collective interest toward sustainability, there is potential for conflict over and to diminish and/or damage the resource. Typically, values guiding decisions made concerning the different protected area categories at the federal level in Canada are illustrated in Table 2, National Protected Area Categories in Canada.

Values		National Protected Area Categories in Canada		
		National Parks	Historical Sites	NMCAs
Non-preference-related	Representational	39 distinct natural landscapes (42)	NA (917)	Atlantic, Pacific, Arctic and Great Lakes (2)
	Obligatory	National Parks Act	Historical Sites and Monuments Act	National Marine Conservation Areas Act
	Functional	Ecological Integrity	Commemorative Integrity	Sustainable Development
	Operational	Total Economic Value	Total Economic Value	Total Economic Value
Preference-related	Stewardship	Indirect Use value	Indirect Use value	Direct Use value
	Economic	Direct Use value	Direct Use value	Option value
	Cultural	Bequest value	Bequest value	Existence value
	Spiritual	Existence value	Existence value	Existence value
	Recreational	Direct Use value	Direct Use value	Direct Use value

Table 2: A comparison of the core non-preference-related and preference-related values between Canada's national parks, national historic sites and national marine conservation areas (Sources: Parks Canada, 2006a; Task Force, 1998).

As explored in this chapter, the different forms of knowledge and differing valuations of parks and protected areas can make decision-making very complex and problematic. The following chapters examine the proceedings of the development of Parks Canada's Recreational Assessment Framework in an attempt to enlighten how such knowledge claims and value discourses are part of such a dynamic decision-making process.

PROCEDURES

The development of a new Recreational Activities Assessment Framework (RAAF) by Parks Canada provides an excellent opportunity to examine a formal planning process in the field of protected areas management as the working group responsible for the development of the new framework is comprised of a diverse group of agency, academic and non-governmental participants. Using the proceedings of the RAAF working group, as compiled in two workshop reports and a draft framework, this case study used content analysis and concept mapping to construct a series of theoretical maps to illustrate the various knowledge and value concepts that were part of the decision-making process. As indicated in Chapter 1, the limitations of the secondary data that was utilized only allowed for a meta-analysis of the content. The procedures used however provide opportunities for expansion through further research identified in the Conclusion.

This chapter will outline the strategy and theories used to conduct the research, as well as to identify the intent of the two workshops. An outline of the techniques used and an introduction to concept mapping is also provided.

Research Strategy

Social research is the systematic observation of social life for the purpose of finding and understanding patterns among what is observed (Babbie, 1998). People interact with one another and create social structures for those interactions. Social scientists seek to discover the nature of human relations just as biologists seek to understand the functioning of physical organisms or astronomers the motion of heavenly bodies (Babbie, 1998). Social research is organized around two activities: measurement and interpretation. Researchers measure

aspects of social reality and draw conclusions about the meaning of what they have measured (Babbie, 1998). Social research is about discovering the patterns and rules governing the way people interact with one another in society. Recognizing the dynamic nature of social interactions and perspectives, qualitative methods have gained greater acceptance of the social sciences as qualitative researchers have grown less defensive and feeling less obliged to defend alternative ways of knowing (Fambrough & Comerford, 2006).

The research conducted is a non-participative, exploratory case study of the development of the Recreational Activities Assessment Framework (RAAF). This research is intended to utilize the secondary data from two workshops, as compiled into two reports ("As Was Said"). This case study endeavours to be both exploratory and descriptive. Exploratory studies are most typically done for three purposes: to satisfy the researchers curiosity and desire for better understanding; to test the feasibility of undertaking a more extensive study; and, to develop the methods to be employed in any subsequence study (Babbie, 1998).

The principle objective of many social scientific studies is to describe situations and events. The researcher observes and then describes what was observed and, because scientific observation is careful and deliberate, scientific descriptions are typically more accurate and precise than casual ones. Exploration is the attempt to develop an initial, rough understanding of some phenomena and description is the precise measurement and reporting of the characteristics of some population or phenomenon under study (Babbie, 1998).

The textual analysis of the reports consists of qualitative procedures for analyzing and interpreting the data. Procedures associated with content analysis and concept mapping are utilized to illustrate the relationships of expressed knowledge claims and values during the framework development process.

Adopting a Contextualist Theory

The following section is intended to outline the theoretical foundations used in the analysis and discussion of the study. This section provides an argument for why a contextualist perspective may be the right approach to understanding complex issues related to parks and protected areas management. Although this study utilizes traits of organic ways of knowing, specifically through the techniques used, the study also recognizes the importance of acknowledging the context in which issues are understood and decisions made.

As initially proposed by Pepper, Fambrough and Comerford (2006) describe the four main world hypotheses to knowing: *formism*, where essences of objects and phenomena are static and context free; *mechanism*, where truth is established by causal-adjustment theory using data from observation and measurement; *organicism*, where truth is determined by coherence theory and is described through unity, alignment, integration, and holism; and, *contextualism*, which focuses on actions and events occurring interactively in the specific context where nothing is static, universal, or unchanging. Fambrough and Comerford demonstrate a paradigmatic shift from organicism to contextualism by providing a framework for generating more useful theories and practices of group dynamics and development that include heterogeneity and pluralism and which acknowledge the role of power and privilege (2006). Fambrough and Comerford promote the examination of group theory in an attempt to find new ways to facilitate group effectiveness in an increasingly pluralistic world. This is a significant recognition that underlines the importance of identifying the multiple forms of knowledge and acknowledging the multiple interests that frame the current understanding of the issue. Under contextualism, knowledge is socially constructed and therefore historically situated and mutually negotiated within a particular

social aggregate and embedded in the active present (Fambrough & Comerford, 2006). Fambrough and Comerford further identify four propositions to define more recent group theory: a reliance on empirical data; group theory is universal and generalizable; the intention of group theory is to improve social relations and institutions; and, groups are entities that can be seen as dynamic wholes. These propositions provide the foundation for the approach used in this study.

Organicism embodies the notion of systematic unity, including hierarchy and its troublesome baggage of the inherent "naturalness" of categorizing each and, differentiation, and uneven distribution of power and authority. An issue identified with organicism is that its root process implies ascension to a higher order of complexity and equilibrium and subsequently toward a universalized conception of perfection (Fambrough & Comerford, 2006). In other words, organic ways of knowing may be considered as the process of recognizing the best available knowledge in order to achieve some final form of understanding or practice. The four characteristics of organicism, as described by Fambrough and Comerford (2006), are that the universe is knowable and truth is systematic; there is an ultimate unity of all things, an ideal; as universe moves toward greater harmony, progress is measured by the degree of integration and fit; and, an implicit hierarchy of systems exists within the universe. The limitations of this approach are that the end 'truths' will most likely be dictated by experts and will likely attempt to resist change. As such, the contribution that organicism has toward improving our methods for understanding is important; however, contextualism promotes the notion that the universe continues to change and that there is no one way of knowing and must there be acknowledged as a limitation to what we consider as the end truth. The result of this being the recognition that knowledge is

only relevant within a particular context of time and place and must therefore continue to be developed and applied.

The characteristics associated with positive group functioning, as listed by Fambrough and Comerford (2006), are reflective of organicismic orientation in the field of group dynamics: cohesiveness and positive identification with group membership; shared goals and vision; agreed on norms to assist in fulfillment of task and maintenance requirements, effective decision-making, conflict resolution, and individual satisfaction; capacity to reach consensus; and, evidence of group development over time as the group should ultimately grow up. In an attempt to minimize the effects of such social and power structures and processes, the focus of the study was toward the dominant discourses being considered by the group rather than those of individuals. The importance of this approach is that there is a focus on how the problem is understood and resolved within the present context of the world, under a given set of variables and conditions.

Contextualism is rooted within a pragmatic and utility driven approach to knowledge, which is dynamic and nonlinear and takes into account preceding events, future events, and the impact of these events on each other moment (Fambrough & Comerford, 2006). The purpose is to make sense of things, where sense-making unfolds within the experiencing, living and acting in the widened scope of the moment. Contextualism is steeped in the valuing of the importance of social location, heterogeneity, change, and human variance (Fambrough & Comerford, 2006). Fambrough and Comerford identify four guiding principles for a contextualist group process:

1. Power inequalities are acknowledged. All value stances are identified and discussed against a backdrop of social justice, as mutually understood in the specific time and

place, interpenetrated by the specific histories and futures represented.

2. Multiple perspectives are accepted as a given and actively sought. Individuals are acknowledged as multidimensional human beings; they are more than their role or title within the immediate context of the group. It is understood that group members bring with them overlapping loyalties and interests to individuals and groups that include that mentions of their identities spanning the public and private domains and space (e.g., professional and cultural values).
3. The purpose and goals of the group are explicit, or the methods by which they will be established are explicit. This means that external sources of power (e.g., directive from the external authority) are discussed openly. Norms of operation are discussable and negotiable and are acknowledged as sources of power and influence.
4. Intentional efforts are made to prevent reification of collective group identity or processes. Periodic retrospective evaluations of group processes are undertaken, and all members are included. The purpose of the retrospectives is to raise awareness of new phenomena present in the internal and external environment, assess the impact of the group dynamic, and make conscious choices about future courses of action and remaining open to change. Individual and group learning is valued.

The contextualism model acknowledges that groups are comprised of individual members and that each member is unique and changes the dynamic of the group. Fambrough and Comerford also recognize that individuals may choose not to participate.

Furthermore, two important paradigms regarding group theory that must be considered, in relation to contemporary resource management, are the ideas of social role theory and social systems theory. Developed by Linton (cited by Babbie, 1998), social role

theory is related to the idea of status and role within society. Status is the position we occupy within society and the role is the set of expected behaviours (Babbie, 1998). For example, it may be reasonable to expect a naturalist to have a strong motivation toward the protection of the environment. A limitation to this theory however is that some individuals may play multiple roles or have multiple values within the group, which may cause issues such as role strain (e.g., too many expectations for one person to manage) or role conflict (e.g., a parks superintendent believes in protecting the landscape but also needs to increase visitor use for fiscal purposes). The purpose of the study is therefore not to focus on social roles; however, it is important to outline the underlying characteristics of the group's dynamics.

Structural functionalism, or social systems theory, is the understanding that a social entity, such as an organization or whole society, can be viewed as an organism; and, like other organisms, a social system is made up of parts, each of which contributes to the functioning of the whole (Babbie, 1998). It is assumed that individuals will fulfill their expected role within the group. This is an important theory when creating roundtables, since assumptions are made that each member will contribute a particular function to the completion of the task and that the multitude of knowledge and values are considered within the decision process. A problem with making such assumptions is that members may not have the ability to or may choose not to contribute to the development of decisions. Identification of the information and values that are expressed and accepted by the group therefore are significant discourses for exploration and, where appropriate, clarification.

The process developed through this case study therefore attempts to assume elements of both organicism and contextualism, in order to provide a more pragmatic understanding of the group. Organicism and systems theory provide an effective method for structuring the

discourses that are involved within the decision-making process. Contextualism and social construction theory recognizes the context of decision-making and helps to remedy the self-perpetuating cycle of assimilation and continuing triumph of the dominant discourse, which may not be conducive to the desired outcome. Contextualism also offers an epistemological frame capable of holding multiplicity and difference, creating a possibility for re-conceiving theory and practice for social justice (Fambrough & Comerford, 2006). In other words, contextualism allows for the inclusion of alternative, context-related perspectives instead of relying on universally imposed dogmatic principles and singular methods of knowing.

This case study is intended to enhance understanding and constructive meaning by multiple-parties in the field of natural resources and protected areas management. Recognition of the contextual limitations of knowledge and values, including such variables as locality and temporality (Lee & Roth, 2006), is important to understanding the application of the decisions made. The study is also intended to better illustrate the problem(s), instead of committing to specific solutions, by developing an effective method for identifying and clarifying the gaps, inconsistencies and marginalized concepts within the collective knowledge base of a complex planning group. Furthermore, the study is intended to focus on group decision-making rather than on group dynamics.

Identifying Concepts: Content and Discourse Analysis

Content analysis is a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases and meanings (Berg, 2007), in which textual material is condensed or classified into fewer content categories (Weber, 1985). The knowledge claims and values desired to be explored through

this study may be categorized through the identification of patterns of discourse within the empirical text. Berg (2007) outlines a standard analytic approach to the analysis of content: (1) data are collected and made into text (e.g., field notes, transcripts); (2) codes are analytically developed or inductively identified in the data and affixed to sets of notes or transcript pages; (3) codes are transformed into categorical labels or themes; (4) materials are sorted by these categories, identifying similar phrases, patterns, relationships, and commonalities or disparities; (5) sorted materials are examined to isolate meaningful patterns and processes; and, (6) identified patterns are considered in light of previous research and theories, and a small set of generalizations is established. Strauss supposes that the categories researchers use in a content analysis can be determined inductively, deductively, or by some combination of both (from Berg, 2007). The development of inductive categories allows researchers to link or ground these categories to the data from which they derive and may be representative of personal experience, scholarly experience or previous research undertaken to examine the matter (Berg, 2007).

Discourse is considered to be the form of social action in the context of some activity (Lee & Roth, 2006) and the production of knowledge through language and practice (Hall, 2001). Discourse analysis focuses on the rhetorical functions of discourse (Lee & Roth, 2006). Although there may be many viewpoints and positions argued, there are however only a limited number of discourse patterns that interaction participants draw on (Gilbert & Mulkay, 1984) and such patterns can be identified within relatively small amounts of data (Roth, 2005). Values however cannot be directly observed, but must be inferred from individual or collective behaviours (Hetherington et al., 1994).

Berg (2007) identifies the use of concepts as the unit of analysis as being more

sophisticated and leads toward more latent than manifest content being analyzed. In relation to this study, using concepts as the level of analysis provides the opportunity to examine common patterns and themes instead of focusing on individual elements within the data. Concepts are abstract elements for representing classes of phenomena within the field of study and conceptualization refers to the process of identifying and clarifying such concepts and allows us to better understand how we interpret the nature of things (Babbie, 1998). Content analysis involves the interaction of two processes: specification of the content characteristics (basic content elements) being examined and application of explicit rules for identifying and recording these characteristics (Berg, 2007). Grounded theory is an example framework that guides the coding of the data and establishment of the concepts to be mapped through a process of open, axial, and selective coding (Creswell, 2003). Creswell outlines this process as generating categories of information (open coding), selecting one of the categories and positioning it within a theoretical model (axial coding), and then explicating a story from the interconnection of these categories (selective coding). As an example related to the RAAF problem, the use of a theoretical lens that highlights any words and phrases related to visitor experience expressed during the first workshop should provide an excellent representation of how the working group understands that particular part of the Parks Canada mandate.

Concept Mapping

The use of concept mapping as a method for capturing and illustrating the range of concepts and relationships of knowledge is growing in many fields, especially in education and business. Concept maps are diagrams indicating interrelationships among concepts and

represent conceptual frameworks within a specific domain of knowledge (Novak, 1990). The maps are used as graphic tools to facilitate capturing, organizing and representing knowledge (Novak & Cañas, 2006). The concepts (nodes) and propositions (relationships) between them can be derived from either the empirical material or from established theoretical models through content or discursive analysis. The first step of concept mapping is to identify the key concepts related to the question being asked. A good concept map should incorporate about 15 to 25 concepts (Novak and Cañas, 2006) and should be relative to a focus question (see Figure2).

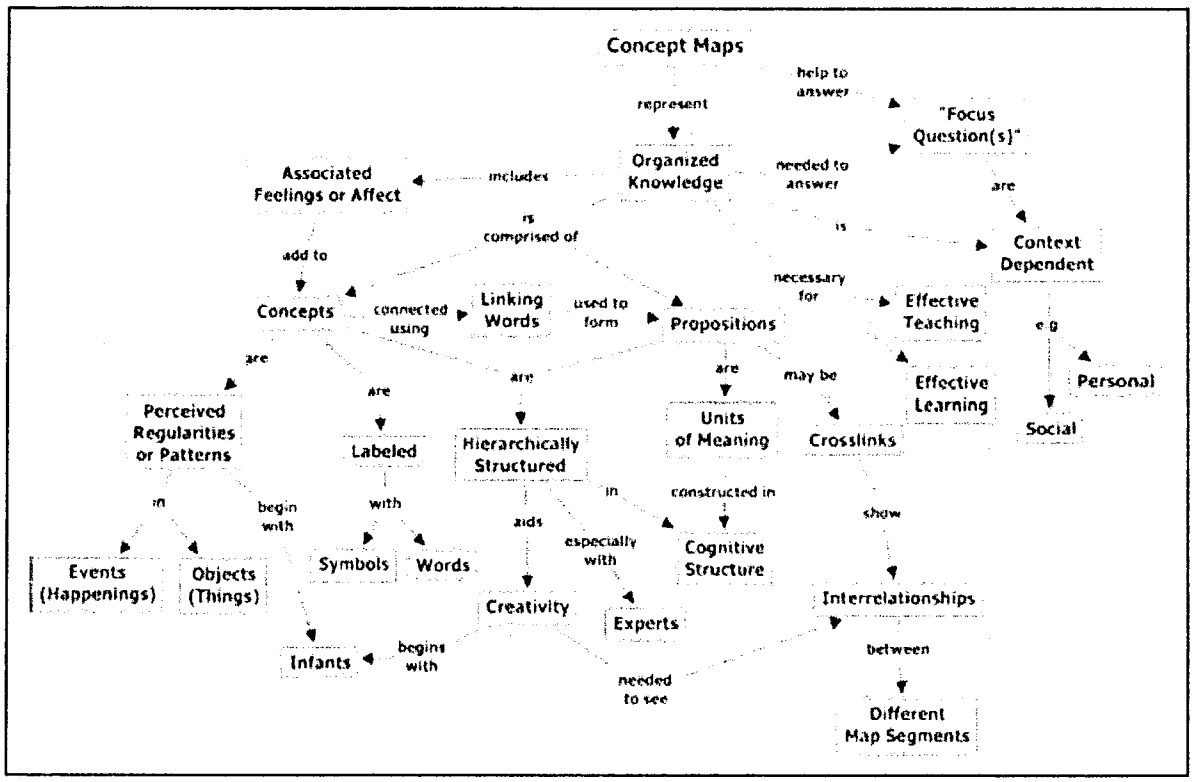

Figure 1: A concept map illustrating the concepts and propositions related to concept or knowledge mapping.

From "The theory underlying concept maps and how to construct them" by I. Novak and A. J. Cãnas, retrieved April 5, 2006, from http://cmap.ihmc.us/Publications/ResearchPapers/TheoryUnderlyingConceptMapspdf.

Novak and Cañas (2006) define a concept as a perceived regularity in events or objects, or records of events or objects, designated by a label that may summarized by one word, more than one word or even a symbol. Novak and Cañas also describe propositions as statements about some object or event in the universe, either naturally occurring or constructed. Propositions are also known as semantic units or units of meaning and are comprised by two or more concepts connected using linking words or phrases to form a meaningful statement. Novak and Cañas (2006) further identify another significant characteristic of concept maps called cross-links. Cross-links are described as relationships or links between different segments or domains of the concept map and are often creative leaps by the knowledge producer. Lastly, there are two features of concept maps that are considered important by Novak and Cañas in the facilitation of creative thinking: the hierarchal structure that is represented in a good map, where the most inclusive or general concepts are at the top; and, the ability to search for and characterize new cross-links.

In terms of the project, there are three focus questions to be asked: what knowledge claims are being incorporated into the development and implementation of the framework; what values are considered for decisions on appropriate activities within nationally protected areas; and lastly, how such knowledge claims and values related to the Parks Canada mandate. These focus questions are intended to explain the two central research questions: how is the issue of assessing recreational activities in Canada's national parks, historical sites and marine conservation areas understood by the working group (knowledge claims and values) and what are the relationships between such values relative to the mandate and directives of Parks Canada?

Data: Workshop Reports and the Framework

The material that will be analyzed will consist of the first and second Recreational Activities Assessment Framework (RAAF) workshop reports. The first workshop was conducted in February of 2006 in Vancouver, British Columbia and the second workshop in October of 2006 in Calgary, Alberta. The multi-page workshop reports are a comprehensive compilation of the workshop proceedings, including dialogue and general transcripts from the working group discussions and focus group exercises. The report is a meta-transcription of the proceedings by an independent consulting firm.

The participants of the workshops consisted of an internal working group from Parks Canada, as well as external working and advisory groups. The internal working group consisted of 15 full-time employees from the Parks Canada agency, representing a relative cross-section of planners and managers from the site, regional and national levels. The external working group, assisting with the construction of the framework, consisted of 15 members from stakeholder and academic groups.

RAAF Working Group workshops.

The first workshop took place in Vancouver, British Columbia on February 1 and 2, 2006. The objectives of the first workshop were to develop common understanding of the context for the new framework; to describe the required characteristics of the RAAF; and, to achieve agreement on the core criteria for making decisions about recreational activities. In order to organize the information collected during the first workshop and to identify areas of focus for the working group, the workshop report is structured into nine sections: knowledge foundation; implementation; applicability of framework; public/visitor perceptions; adaptability and responsiveness; characteristics of the framework; balance/finding common

ground; scope and definitions; and, structure and process. The following key messages regarding the development of the framework during the first workshop session were also identified by the working group (RAAWG, 2006a):

- Group Diversity: There were approximately forty participants from non-governmental organizations and Parks Canada working on the framework, representing a diverse set of interests, across a wide geography and range of expertise.
- Exploratory: A commitment to building on, and advancing, how activities in national parks are managed in order to improve ecological integrity. Progress was made on developing the structure of the assessment and on identifying the components of what the framework will entail.
- Reflective and Participatory: As a multi-stakeholder exercise, diverse set of inputs were integrated throughout the process and there was a commitment for opportunities for input beyond, and broader than, the Working Group.
- Relevant and Consistent: Looks at the commitments of the framework at both local and federal scales.
- Schedule: Preliminary stages for developing framework with timetable for accomplishing objectives. The framework to be in place by March 2007.

The second workshop took place in Calgary, Alberta from October 17-19, 2006. The objectives of the second workshop were to initiate participation of the working group in a trial application of the RAAF; to review experiences and input received; to discuss refinements to the RAAF; and to formulate plans for implementation and training. The following key messages regarding the assessment process from the second workshop session

were identified by the working group (RAAWG, 2006b):

- Credible: "*Trust us, we did it really well*".
- Collaborative: Successful exercise based on collaboration. The whole exercise has underlined and affirmed the value of integrating a range of perspectives (both internal and external).
- Communication: Framework is more than just a tool for determining what type of activity is acceptable or not; it also opens up a discussion to make people more aware of what is happening.
- Principle-based: Affirmed the four guiding principles and modified the criteria.
- Comprehensive: Some of the bigger holes that were existent in the assessment framework were resolved. The process was fine-tuned to make it more realistic.
- Special Events: Includes a special events component in the assessment process.
- Schedule: Developed a timeline for implementation.
- Testable: The framework was tested in the broader context of planning and decision-making. As an example, "*doing the field test on mountain biking was really a great thing as it made the document alive for our subsequent discussions*". The group then affirmed the initial vision of what the framework was intended to be.

Interpretation of data: Concepts within protected areas management.

The type of causal reasoning used to describe the Recreational Activities Assessment Framework is an idiographic explanation (Babbie, 1998) of how the working group developed the assessment framework. Both inductive and deductive reasoning is used to guide the analysis of the data. The intent is to identify the various discourses that are

involved with such complex protected areas management decision-making, and then to observe how those discourses are incorporated into the development of the framework.

In order to understand how the data was analyzed we need to first identify the units of analysis or units of observation. The units of analysis are those things which we examine in order to create summary descriptions of all such units and to explain differences among them (Babbie, 1998). Typically most social scientists use individual people as their units of analysis; however, any group, organization, or social artifact or behaviour may be analyzed so long as it is clear as to what the unit of analysis is (Babbie, 1998). The individual discourses are identified as patterns of behaviour which may be observed within the data. The purpose of delimiting the units of analysis to latent concepts, instead of simply manifested content, is that such a frame provides a more effective method for exploring deeper meanings (Berg, 2007) to expressed knowledge claims and values by the working group. Although position and frequency of expressed content may be useful (e.g., number of occurrences in text), the investigation of concepts that receive meaningful dialogue and discourse, which includes narrative of both agreement and disagreement, will be further explored. The underlying knowledge claims and values used to either support or counter the argument is the desired information to be explored.

An example of this proposal is the discussion concerning risk and liability. Risk and liability is identified by the working group as being an important criterion for determining the suitability of a recreational activity. The working group discussed a relatively newer activity, Zorb Ball, where participants climb inside a large plastic ball and roll along the ground. In analysing this concept, there were X occurrences of risk and liability manifested within the first workshop report dialogue and they are predominantly related to suggestions for criteria

through brainstorming exercises. Interpretation of the latent value of risk and liability suggested that local conditions play a significant role in determining the appropriateness of an activity toward a local context and explicit agreement is provided. For example, an activity such as Zorb ball would not be appropriate near cliffs. In this instance, members of the working group use rational knowledge claims and values to create an understanding regarding the recognized subject.

Inductive reasoning was used through the first workshop to identify the themes or concepts related to the different discourses. The first step was to specify the major concepts and variables to be analyzed throughout the development of the framework. The importance of doing this is to ensure that all the patterns being expressed are consistently identified and then analyzed. Deductive reasoning was used through the second workshop to observe whether the patterns of discourse identified within the first workshop were transferred to the second workshop and which and how they were incorporated into the development of the framework. The major concepts and themes deduced from the initial workshop acted as the units of analysis. The purpose of doing so is to gain a better understanding of how the different knowledge and values are incorporated into the decision-making process. The importance therefore was on describing what went into the development of the framework, in contrast to focusing and explaining the group processes.

The concepts or nodes are identified within the text and coded as latent sociological constructs (Berg, 2007) and are outlined in Appendix B. The relationships between the concepts or propositions are captured *in vivo* (from text). The major themes identified throughout the first workshop were related to discourses in knowledge, values, and the contextualization in decision-making. Discourses related to expertise include expert

knowledge (professional, academic, authoritative) and lay knowledge (local and traditional). Discourses related to values include non-preference-related values (representational, obligatory, functional, and operational) and preference-related values (protection, economic, cultural, spiritual, and recreational). The discourses related to the context in decision making include rational decisions (objectivity, process) and relational decisions (regionalism, subjectivity). This method will therefore endeavor to provide a more explicit representation of the concepts expressed by the working group on how to assess recreational activities in relation to the three main elements of the mandate: protection; education; and, visitor experience. Concept mapping may be useful to identify missing, ambiguous and erroneous concepts and relationships through a visual representation of the collective knowledge base. Such gaps and misperceptions of the concepts and relationships, when overlooked and not corrected, may impact the success of the decision-making process.

A characteristic of concept mapping is that the concepts are typically organized in a hierarchal fashion with the most inclusive, general concepts at the top and the more specific concepts arranged accordingly below (Novak & Cañas, 2006). By hierarchically displaying the concepts we can reveal the levels of knowledge claims, values and discourses that are embedded within the decision-making process.

Novak & Cãnas (2006) indicate that constructing concept maps is most effective when the organization pertains to a situation or event (context) that requires understanding. Categorization of the data therefore will be to the mandate of Parks Canada and to the management of recreational activities in Canada's national parks, historical sites and marine conservation reserves.

Validity and Context of the Case Study

Regarding idiographic explanation, Maxwell speaks of the validity of an explanation and says the main criteria are its credibility or believability and whether alternative explanations were seriously considered and found wanting (as cited by Babbie, 1998). The first criteria demands that the explanation given make sense, even if the logic is sometimes complex. The second criterion reminds us of whether all possibilities have been eliminated and the remaining explanation therefore must be the truth (Babbie, 1998). This is consistent with Berg (2007) where "the criteria of selection used in any given content analysis must be sufficiently exhaustive to account for each variation of message content and must be rigidly and consistently applied so that other researchers or readers, looking at the same messages, would obtain the same or comparable results" (p.306).

The findings of the research will be validated through a number of methods, including comparing findings with existing literature and acknowledging discrepant information and alternative perspectives (Creswell, 2003). Due to the range of experiential and theoretical knowledge claims and values of the RAAF participants, a wide variety of concepts and considerations were anticipated. A significant contribution of this case study is the applicability of the process towards other protected areas planning and management initiatives and in other jurisdictions.

The determination of whether research has external validity is whether the results are applicable or capable of being generalized to other populations, settings, and times beyond the present conditions of testing (Hetherington et al., 1994). The purpose of the case study is to gain a better understanding of the assigned values that are given by a diverse planning group within a complex planning initiative. Recognizing the limitations of interpreting held

knowledge and values by the individual, this case study endeavours to recognize patterns of discourse within a diverse planning group.

Using content analysis and secondary data.

The primary advantage of conducting a content analysis approach using secondary data is that the process is relatively unobtrusive; predominantly uses data already produced; is cost effective, as materials for conducting analysis are easily and inexpensively accessible; and, provides a means for studying a process that occurs over long periods of time (Berg, 2007).

The most prominent weakness associated with such processes is that the content analysis is limited to examining already recorded messages (Berg, 2007), which means that certain information or data may be unavailable or inaccessible. As well, content analysis is ineffective at testing causal relationships between variables (Berg, 2007). This drawback is minimal in a descriptive or exploratory study.

The qualitative analysis software *Atlas.ti* (v.5) was used to condense the material by coding the text into concepts (nodes) and relationships. The program IHMC *CMaps* is used to better present the final maps.

FINDINGS

The Findings section is an exploration of the two workshop reports and draft assessment framework outlined in the Procedures. The following section explores three themes: the role of expertise, the diversity of values, and the principles of the decision process. These themes were selected to address the first objective identified for the study: how is the issue of assessing recreational activities in Canada's national parks, historical sites and marine conservation areas understood by the working group? Narrative from the reports is used to facilitate discussion of each concept and an outline of how each knowledge claim and value concept was identified and coded within the data (Appendix A). The second objective of the study (i.e., relationships to the mandate and directives of Parks Canada) will be explored in the following chapter.

Expertise in Canada's Protected Areas

Expert Knowledge

Expert knowledge is considered to be reflective of the knowledge generated by respected professional authorities, organizations or individuals through approaches such as scientific research and resource management. Concepts such as *'best practices'* and *'database'* are identified and explored. The concepts were grouped into three distinct knowledge claims: authoritative knowledge; professional knowledge; and, academic knowledge. A consistent theme throughout the first workshop was related to information and knowledge management and utilization, where the forms of expert knowledge were the most prevalent.

Authoritative knowledge.

Authoritative knowledge refers to the knowledge claims held internally by the responsible authority or organization. In the case of the Recreational Activities Assessment Framework, the governing authorities are Parks Canada and the Government of Canada. Such knowledge claims are developed through internal research and policy direction and may be expressed through official or technical reports. Specifically, authoritative knowledge deals with questions such as what have we tried and what have the results been?

Authoritative knowledge claims within the data were found to be primarily linked to the policies, legislative requirements and processes of the Parks Canada Agency. As such, an interesting comment expressed was a concern over developing "*a framework that fits into whatever other policies and guidelines the Parks Canada agency has...a framework similar to others that provides guidelines*". The concern centres around the limitations learned from other established visitor frameworks and decision processes, in which the criteria and processes are geared specifically to direct the decisions being made in order to adhere with the agency's perspective.

A fundamental principle for applying the new framework that was expressed is that "*decisions are inevitably going to be made in a participatory manner and the decisions, many of the decisions about an activity being allowed in a particular location will be made on site specific field unit levels*". This statement recognizes the importance of the role that Parks Canada field units will have in making decisions on recreational activities within the local context. The working group also conceded that the ability for Parks Canada to make generalized decisions on an activity is limited to strategic management at the national office level of the agency. "*Most of us are sceptical that you can clearly say on a national level*

activity that it is not allowed in national parks period". Guidance toward decision-making therefore comes from a profiled knowledge of the permitted and encouraged activities concerning an individual park. The working group recognized that, typically, an individual park is required to do the necessary background work to consider an activity. The direction for a particular park, compiled in a park management plan, also provides a source for authoritative knowledge claims during recreational activity decision-making.

Members holding an authoritative position however may be concerned with ensuring that decisions are made in concert, as much as possible, with the policies and objectives expressed within such planning documents and legislation. Explicit agreement by the working group recognized that such a "[framework process] *has to be integrated into existing planning and management decision-making processes*". There needs to be recognition of the '*state of the park in today's context, including things like management actions and the results and then feeding that towards management planning itself*". The need to consider how certain decisions are associated with the mandate and the direction of the national system is of central interest to Parks Canada. The agency is also concerned with assuring that decisions being made across the system are fair and equitable. The working group recognizes this as being central to the application of the framework. *"We all agreed at the end that the big thing is that structured approach. We are all following the same structured approach in every park. This is the reason the decision was reached in PEI or in Jasper* [a given context]". Such a statement also submits the rationale behind individual decisions made in different parks. The focus therefore is on the consistency of the process and not the decision. As a result, consistent assessments across individual parks or protected areas may not be reached and perhaps shouldn't be. There may be a number of variables including differing

values and site-specific conditions and setting that promote an alternative perspective to an activity. What makes sense in one place may not be universally accepted.

Further development of this concept occurred during the second workshop, as authoritative knowledge tended to be closely related to the operational values expressed, specifically in relation to capacity. This is a rational proposition considering that many operational consequences (e.g., increased waste management and staffing) of decisions are typically shouldered and implemented by the responsible authority. The creation and administration of a recreational activities assessment database by Parks Canada is a proposition to establish a series of 'best information' and 'best practices' toward recognized and potential activities. The result is intended to provide a more formal source of direction for a particular activity from Parks Canada, while allowing for localized decision-making. Nonetheless, the direction of the working group is toward a more participatory approach to the framework instead of the internal guideline or directed approach, which may be identified as a limiting dimension of other visitor management frameworks. The result is a process where the varying perspectives, both internal and external to the Agency, are incorporated into the decision process. However, what happens when there is disagreement between the national level and the site level or between similar protected areas? The potential opportunities and limitations for such information transfer and directed decision-making will be discussed in the following chapter.

Professional knowledge.

Professional or expert knowledge refers to the knowledge constructed by individuals and groups that may be considered as working professionals within a specific field. Knowledge developed by other governments or inter-government agencies (e.g., United

States National Parks Service) is an exemplar of this form of knowledge, which also includes recognized organizations that have focused research on the given topic of interest, such as the International Union for the Conservation of Nature or the Sierra Club of Canada. Such knowledge claims tend to be recognized as 'best practices' and are typically developed through experience and management action. In other words, this form of knowledge addresses questions such as what have they done and what have the results been? At a general level, this may be considered the best available external information regarding the trends or tendencies of an activity. "*What has somebody else found out about the conflict between mountain bikers and hikers*"? The spatial context of this statement within the dialogue implies the findings of other jurisdictional management practices; however, such knowledge may also be examined in more formalized methods such as academic research and case studies.

A fundamental part of the initial workshop was the establishment of a '*knowledge foundation*' pertaining to visitor management and, specifically, knowledge regarding existing frameworks that have been developed. As such, professional knowledge provides the most extensive source of background information regarding recreational activity assessment and visitor management expressed by the working group. The most popular visitor management frameworks used by other international agencies are identified by the working group and introduced in Chapter 2. The establishment of these frameworks and the lessons learned from their development and implementation are briefly reviewed, including the key elements of their processes. A pivotal question identified by the group is "*how is* [the RAAF] *supposed to be different from established visitor frameworks*"? This question seeks to address the limitations of the other recreation framework examples used to initialize the RAAF yet also

contributes to limiting creativity or may create an understanding gap. Due to the range of expertise within the group, some members may also potentially have a professional understanding of the benefits and disadvantages of particular frameworks while other members of the group may have minimal understanding of each framework or process. As such, a more significant question that may be inferred from the data, yet is not explicitly expressed during the first workshop, is what is the intention of new framework? An alternative method for initializing the process therefore might have been to start with brainstorming to identify what the framework is intended to accomplish and what elements of it will be important.

The utilization of 'best practices' and the professional expertise of external agencies and partners are identifiable throughout the framework development process. Discussion over methods or mechanisms for exchanging both formal (i.e., scientific knowledge) and informal (i.e., experiential knowledge) knowledge in order to develop a 'defensible' position was evident during the first workshop. It is therefore rational to consider the inclusion of professional knowledge as being primarily used for profiling an activity and its associated impacts. As such, professional knowledge claims may be expected to be more prevalent at the national assessment level. An objective of the group exercise was to develop a broader profile on particular recreational activities beyond that of Parks Canada itself. Such an understanding would include scientific research and transfer of expertise through partnerships with external agencies, academic institutions and non-government organizations at the national and international levels. The importance of a strong balanced scientific understanding, based upon both natural and social science, of the issue is considered to be imperative toward effective protected areas planning and management. The utilization of

such professional knowledge being expressed is a significant contributor to establishing a broader level of understanding of a recreational activity, including a background on its general impacts and trends in order to provide strategic direction for the systematic planning and operational management required.

Academic knowledge.

References to academic knowledge are those claims generated through academic research and discourse. The knowledge within this very explicit form of expertise is typically theoretical in its foundation; however, pragmatic examples of research (e.g., case studies) may also be conducted. Academic knowledge is produced through research and study and is explicitly transferred through academic literature and discourse. Particularly, the validity, credibility and generalizability of such knowledge claims are scrutinized through publicly accessible academic papers, journals and forums.

The working group explored the role of academic research in contributing toward making recreational assessments. The group recognized the role of the academic community in the development of existing visitor frameworks, especially in consideration to those processes that rely heavily on scientific knowledge (e.g., VIM). The working group identified such knowledge as being "*imbedded in theory or methodological questions*". Such a perspective reflects the significant contribution that previous academic research has had in establishing scientific methodologies for defining acceptable standards and norms. The benefits of academic research toward enhancing scientific observation and measurement of ecological and social factors will be discussed in the next chapter. Such benefits and disadvantages of academic knowledge are alluded to throughout the first and second workshops. An advantage of academic research is that it is often considered as objective and

impartial, which makes the involvement of academic research useful during such planning exercises. A disadvantage of academic research that was identified by the working group is that much research is conducted at the theoretical level and "*written for different purposes*". Interpretation of these comments leads to questions regarding the actual applications and motives surrounding academic research and discourse, especially regarding decisions made at a local level.

Transfer and integration of expert knowledge.

The development of partnerships between professional organizations and knowledge exchange with other government agencies responsible for protected areas management is a key concept identified by the working group. The ability to make informed, defensible decisions is considered to be a central part of what the RAAF is intended to accomplish. The focus toward information transfer and management is evident, with an emphasis on capturing and communicating both formal and informal expert knowledge processes, including the contribution of various expertise and science. "*The idea was that this [Recreational Activities Assessment Team] is a multi-functional group of people probably at the national level who would do the national assessment and that group would be a group that would get together on a regular basis, be familiar with the framework, when there is a specific issue we would involve national level stakeholders in that discussion*". An assumption may be made, based on the development of previous frameworks, that academic research and experts would be considered as potential partners when conducting such national assessments.

The working group also clarified that scientific knowledge is intended to feed the decision process and not the other way around. "*Inevitably it is not going to make the decision for you; but, it is supposed to pull out information on a higher level so you can make*

a more informed decision." The group recognizes that such formal science systems or expert knowledge tend to carry more weight when making decisions, even when wrong. Another significant recognition by the group is the imbalance that has occurred between natural and social science information when making decisions on activities. The processes and measures of the framework should address such imbalances.

The second workshop elaborated upon themes identified during the initial workshop regarding the context of expert knowledge. Although the proceedings of the second workshop were concentrated on the review of a proposed draft framework, including the semantics of the criteria and reliability of the scoring processes, there were latent knowledge claims that may be explored within the data. The second workshop continued with the theme of recognizing the reliability of the knowledge used to make decisions and the subjectivity related to scoring the criteria based on the evaluator's perspective and experience.

During the workshops there was a convergence towards the benefits of a comprehensive information system that provides decision-makers with the most up-to-date information on environmental and social impact assessments and monitoring protocols and standards. Recognition of the previous limitations of the VIM process were raised, which included the lack of social science information and public involvement and the propensity for not being transferable and becoming outdated. A separate Recreational Activities Information System (RAIS), in preparation by Parks Canada, was introduced as an electronic database to facilitate information exchange between field units and regional and national offices. Interests in addressing the difficult issues of social science, as well as access and contribution to the database by non-Agency sources, were expressed. The *"[RAIS] will be key to communicating results of assessments, informing assessments (including international*

research), allowing consistency in application, legal opinions, etcetera. These types of things could be communicated nationally." The introduction of the RAIS provides capacity for information and knowledge exchange; however, as noted by the group, how will interested individuals and groups external to Parks Canada be connected to such a system, including the capability to access and/or contribute to the database?

Lay Knowledge

Lay knowledge was identified as the knowledge held by individuals and groups that are not considered to be the 'experts' within the given field of interest. The theme was divided into two types of knowledge claims: local knowledge and traditional knowledge. The explicit use of lay knowledge claims was not significantly expressed during the two workshops. In other words, references to how an activity could affect a specific setting or feature were not generally discussed by the main group. Considering that the workshops were designed as a national level process for the development of a framework, it is not surprising that both local and traditional knowledge claims were not as forthright as the expert knowledge claims within the dialogue. A notable exception that may be considered is through the discussion that occurred after the trial application of the working group during the second workshop, where specific references to the test location and associated impacts were expressed. A hypothesis therefore is that that such knowledge claims may be more prevalent within the data should a local assessment be conducted using local public participants.

Local knowledge.

Local knowledge refers to the practical and experiential knowledge within a given localized context. This form of knowledge may be shaped through direct observation and general human inquiry by individuals and groups, who may or may not have a technical or professional background related to the field. Such information may be considered typical of informal and/or tacit knowledge held by stakeholders, including non-governmental organizations, lobby groups and the general public. These individuals and groups may be considered as those "*folks that know the context*".

The first workshop attempted to identify existing and new mechanisms or processes that provide opportunities for significant integration of local knowledge in locally-based decision-making. The Limits of Acceptable Change visitor management framework was identified as a relatable process. Elements of the LAC process were expressed throughout the first workshop, particularly in relation to establishing acceptable conditions and standards or norms at the protected area site. Such comments and discussion reflected the contextualized nature of information, as "*everyone agrees that different situations and numbers apply*".

The working group recognized the role of an "*advisory board or a group that meets regularly...when you are at the point when you need more information you have a team of stakeholders that you can pull in to give you more advice*". The desire of the working group to maintain mechanisms for meaningful stakeholder involvement acknowledges the contribution that they may have toward making more acceptable decisions. The inclusion or participation of the public and stakeholders is encouraged throughout the process, as the level and method of external contribution to the process is ongoing and continues to be addressed. Participants also felt that conducting assessments can be beneficial to effectively

communicating the process to local interest groups and also providing a better understanding of the benefits and impacts that new activities may have from a variety of interests.

Traditional knowledge.

Traditional knowledge, for the purposes of this paper, refers to the generational knowledge transferred or passed down within local communities. This knowledge, or 'cultural truths', are accepted localized understandings of patterns or events and may be either tacit (e.g., held by an Aboriginal community elder) or explicit (e.g., archived in the community newspaper). The definition of what is considered 'traditional knowledge' in the literature was expanded to include the full range of knowledge that is passed down by both local Aboriginal and general community members.

Aboriginal consultation and inclusion was identified as a process to be completed separate to the RAAF process. An assumption may be made that the integration of publicly held knowledge may be expressed in respect to a particular location or historical event. Discussion over how such understandings and perspectives could be integrated into the framework however was not addressed during the two workshops.

Capture and integration of lay knowledge.

A significant consideration toward capturing tacit and experiential knowledge from the field is related to the development of a more open, inclusive method for knowledge management. The development of a straightforward method for the organization of alternative perspectives provides a broader knowledge base and understanding regarding an activity. "*If you do a really good job in developing your park or site vision collaboratively with your stakeholders and partners, then you will get those parameters that will help you to define it*". Such a consideration is consistent with the notion that the framework should be

simple enough for the inclusion of participants at different levels of expertise. As identified through the previous chapters, the benefit of a contextualist approach is that it promotes the inclusion of alternative ways of knowing and recognizes the dependency on expert knowledge. Similar questions to those related to expert knowledge management that may be raised are "*how such a database or information system would work*?', "*specifically who would have access to it?*" and "*how would the information be managed*?". Also, the proposed course is to "*not create an additional structure for stakeholder involvement because that creates a burden for stakeholders. Look at the existing structure and see how you can build on that*". The consideration is that existing mechanisms, such as the park planning process, would be the best forum for capturing publicly held knowledge and that introducing another process may not be required or appropriate.

A Discourse on Knowledge

The initial course of the first workshop was dedicated to recapping the knowledge foundation that exists to evaluate recreational activities and determining how such knowledge should be incorporated into the decision making. Much of the first workshop was dedicated to summarizing the knowledge foundation that exists in order to evaluate recreational activities and determine how such knowledge should be incorporated into the decision making. The result was a discourse weighted toward more formal, expert forms of knowledge. What has been done by other agencies and countries? How did it work and what was learned? This is a regular theme that occurred through the first workshop where there was an expressed need to know and understand what others have learned. This is strongly linked with the desire to establish a perspective that is both credible and defensible in order

to justify the decisions made. A significant note is that, although such knowledge may provide a reasonable foundation, it must also be acknowledged that such other findings or results are based on a different set of factors and conditions, such as agency principles, legislative requirements and operational objectives. Furthermore, the fundamental goals and objectives of the working group were focused toward the construction of the framework and, as a result, the dialogue was focused on rationalizing the elements (e.g., criteria) and characteristics (e.g., decision process) of the framework. This is a rational and effective method for establishing a starting base for a process; however, it may also contribute to elements of tacit agreement by initially limiting creativity and creating an understanding gap. Some group members may have minimal understanding of existing frameworks or processes, while other members of the group potentially may have a more professional understanding as to the benefits and disadvantages of particular processes.

Participants also reflected that "*formal science systems tend to carry more weight even when they are wrong*" and, as such, they recognized the importance of explicitly incorporating more informal knowledge into decisions. A way to "*deal with information or knowledge in a broader sense in some way and that is part of the dialoguing with folks that know the context*". As a result, the second workshop elicited more discussion over the inclusion of local knowledge, specifically through a practical application of a draft of the framework in the field by the working group. The course of the workshop however was still directed to fine tuning the wording of the evaluation criteria and establishing the flow of the decision process.

Interpretation of the data indicated that the intent of the new framework is to develop a more effective process for identifying and integrating a broader knowledge base and perspectives directly into the decision-process concerning recreational activities. "*We should have national criteria but also local, park, site and NMCA specific criteria to guide decision making. There is a national structure that must include national and international trends, data and knowledge at that high level.*" Filters and criteria to evaluate the appropriateness of a recreational activity were developed, although the working group recognized that scoring is a subjective measurement. The initial intent of the new framework was to provide planners and managers with a process that allowed for informed judgement. The process would facilitate the flow of best information available, while allowing managers to have some local autonomy for how recreational activities may be suitable under local conditions and contexts. "*Inevitably it is not going to make the decision for you; but, it is supposed to pull out information on a higher level so you can make a more informed decision*". The problem is that, at the national level, there is potential for the decision to be not as well framed as at the local level, where decisions may be more reflective of local conditions, requirements and concerns. Figure 2 provides an illustrated interpretation of the relationships between the different knowledge claims and how they may relate to the different contexts and forms of expertise. The figure identifies the role of tacit and explicit forms of knowledge and the central importance of opportunities for knowledge exchange to foster the integration of lay and expert knowledge. An important consideration is that all the various knowledge claims are inputs into a common understanding within a given local or system level context.

Interpretation of the first workshop report indicates a focus on what needs to be part of the national level assessment, including how the different forms of knowledge claims are included. The result was a national level assessment process that relies heavily on expert knowledge and a generalized understanding of the implications and opportunities regarding a particular recreational activity. A potential drawback is that this may sway or limit the benefits of doing a local assessment, in which there may be either favourable or non-favourable conditions or opportunities found that warrant an opposite view as to the potential activity. This is an interesting concept that was explored further during the second workshop where the idea of the group to be able to tailor the assessment to respond to local conditions and concerns by including the local public and stakeholders in the decision process. The Discussion section will continue to explore the potential knowledge relationships between the national assessment and the local assessment.

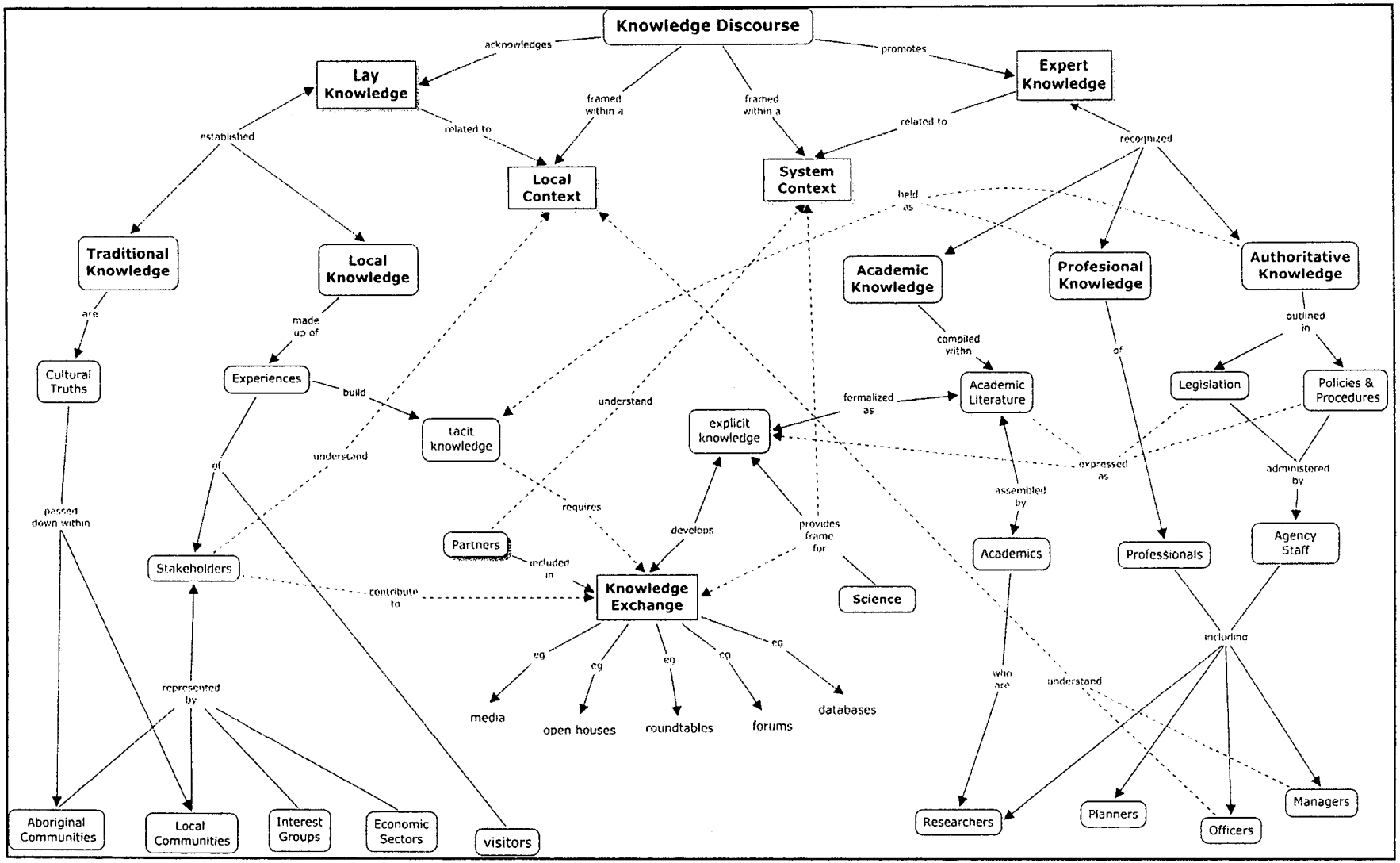

Figure 2: A concept map illustrating the relationships between the different knowledge claims in protected areas management.

Values in Canada's Protected Areas Management

In accordance with the scope of this case study, the focus of the analysis was toward how park-related values relate to assessing recreational activities within parks and protected areas. The values associated with parks and protected areas were divided into two main themes, non-preference-related values and preference-related values, as discussed in Chapter 2. An outline of how each value concept was identified and coded within the data is available in Appendix A. The values expressed during the first workshop tended to be connected primarily to discussions on potential criteria for screening and comparing characteristics of an activity, which is rational considering the initial workshop's objectives (e.g. identification of criteria/issues). These values are better incorporated into the development of the core principles guiding the intent of the framework, as refined during the second workshop.

A significant note is that the three elements of the mandate were considered as a single entity when exploring each of the values. Instead of looking at these as separate, unrelated themes, the interpretation of the reports was initially done with the perception that each element is connected to each expressed value. As an example, obligatory values will have implications toward protection (e.g., parks must protect species-at-risk); education (e.g., parks are intended for interpreting natural and cultural heritage); and visitor experience (e.g., parks must be inclusive for all Canadians).

Non-preference-related Values

Non-preference-related values were a significant part of the working group's discussions during the first workshop, especially in concern to identifying the core criteria and screening processes of the framework. Since non-preference-related values are factual-

based, the purpose of including them is to establish a frame of objective criteria to make justifiable or defensible decisions. The four non-preference-related values explored were representational, obligatory, functional and operational.

Representational value.

Representational values are generally related to those site characteristics for which the protected area was initially identified and established. "[We] *know that parks and sites are unique. That is why they have been established*". Such values are reflective of the unique or significant features and landscapes and how they may fit into the overall parks system. Accepting that recreational activities are connected to features or landscapes that support those activities, the unique opportunities for recreation that protected areas supply may be considered as the basis of the recreational potential of representational values. "*It is almost up to each park and site to define what makes them unique. From there it would make it easier to decide what activities you are going to offer. If you are going to offer solitude or getting away from it, then it will be a screening criterion that you will not be allowing activities that give you high density groups*". Conversely, it is also important to recognize the significant or unique features and landscapes that may be impacted by a particular activity. As an example, ice caves may be considered a unique feature within the whole parks system and as such would provide distinctive recreational opportunities that may not be available or accessible elsewhere.

Representational values were not significantly explored by the group during the first workshop. An important caveat to this consideration is that although each protected area does present unique opportunities and values, each area is considered to be part of a broader strategic direction. Thus, decisions made at the site level may not apply or may have

significant implications across the system. The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the representational values of a site:

- The activity provides visitors with opportunities to experience the uniqueness of the heritage place or to experience the place in a unique way.
- The activity can be done in a way that ensures there are minimal impacts to valued natural and/or cultural resources.

These criteria regarding an activity allude to the benefits of providing unique recreational opportunities and were elaborated on during the second workshop. At the local or site level, representational values concerning recreational activities assessment were best described as how the "*tool evaluates the contribution...of the activity to [the] site vision*".

Obligatory value.

Obligatory values are primarily linked with screening activities against established laws, policies and regulations governing the existence of particular activities. Similarly, these values are also concerned with assessing and preserving the normative conditions governing a recreational activity, especially in regards to visitor expectations and behaviour. Obligatory values however do not include the provision of recreational opportunities or visitor experience. Although visitors may expect a particular activity to occur, other values may warrant not allowing or not supporting it.

During the first workshop, discussion of obligatory values was focused on the components of the framework which are required to ensure that decisions consider any legislative or legal commitments. The initial concern is the application of the framework at the systems level of strategic planning and legislation; however, there are a significant

number of instances in which "*the main realm of application seems to be in the parks management planning process*". In other words, the discourse is wrapped within how the framework fits into either the system planning and/or the park planning processes.

The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the obligatory values of a site:

- The activity is consistent with Canadians' expectations for the nation's national heritage places.
- Providing opportunities for this activity helps achieve Parks Canada's visitation objectives.
- The activity responds to identified needs and expectations of target markets.

The group acknowledges these as screening criteria which the activity must meet, and specifically whether an activity violates legislative commitments or policy directives. Does an activity fit into current policy direction and, if not, does it require changes or new policy direction? This is primarily significant when screening an activity at the system level, specifically where changes to policy direction may be required.

An interesting note to consider is that "*there are national associations that do regulate or do look after particular types of activities*". As such, there may be different levels of regulations or guidelines that govern how activities are conducted and, in some situations, accredit who may participate (e.g., SCUBA diving).

Functional value.

Functional values are associated with the ecological and social components and processes that occur on the landscape and are specifically, in terms of Canadian national

parks management, concerned with the establishment of ecological and commemorative integrity.

During the first workshop, the group identified criteria that should be considered as part of assessing the effects that an activity may have on the natural and social environments. The question is not just how allowing, not-allowing or supporting a recreational activity will impact the ecological and commemorative integrity of a site but also how it may or may not affect the social conditions of other activities. Furthermore, a significant discourse surrounds the perspective of not just focusing on '*mitigating the impacts*' that activities have on the resources and between one another but on '*enhancing the achievements*' that an activity has on all of the elements of the mandate. The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the functional values of a site:

- Authentic and/or high quality opportunities can be provided for this activity.
- The activity can be done in a way that ensures there are minimal impacts to valued natural and/or cultural resources.
- There are no significant cumulative effects for this activity.
- All potentially significant impacts resulting from this activity can be mitigated.
- With appropriate mitigations, this activity can occur without adversely affecting the experience of other visitors.

As may be expected, the functional values associated with parks management were considered of the utmost importance. The implications of functional values are toward assessing the impacts and anticipated sustainability of the resources on which the activity depends. The working group was in favour of ensuring that both activities and resources be

monitored and adaptive management actions are taken where required. *"Making sure that you are not just approving the technology but you are factoring those considerations into a management regime for that activity that then said as you are going along and getting your information from the monitoring what are you going to do on the mitigation side?"*. In other words, the importance of developing technologies and scientific methods for measuring and studying phenomena is recognized, however the interpretation and utilization of the knowledge created must be built into the planning and management processes. As such, the application of functional values are primarily focused at the individual site level but are also closely linked to system level processes, such as the state-of-parks reporting.

Operational value.

Operational values are considerations toward providing services and managing visitor activity, including operational commitments and issues, such as physical carrying capacity. Surprisingly, these values received minimal discussion by the working group during the first workshop. Criteria associated with safety and liability were afforded the most attention.

An emphasis toward establishing the feasibility of an activity was explored during the second workshop. At that time, the working group expressed a greater concern with how an activity will impact the local park and community infrastructure. Questions also remained as to how an activity will be monitored and how the resulting information may be used to mitigate negative impacts and maximize positive benefits, while functioning within the greater operational strategies for the protected area and system. The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the operational values of a site:

- High quality, authentic, safe and enjoyable opportunities can be provided for this activity.
- A feasible research and monitoring program can be implemented within existing resources to continue learning about the effects of this activity and its potential mitigations.
- Parks Canada can set realistic expectations regarding the risks and the level of search and rescue service available to visitors participating in this activity and visitors are willing to assume the risks associated with this activity and this level of service.
- The activity's impacts on Parks Canada's revenue and expenditures have been considered and are acceptable.
- There is capacity – in Parks Canada and/or in partnership with local communities – to provide the required services and facilities (e.g., capital costs, staff, volunteer capacity, community capacity) for this activity.

Figure 3 is an illustration of how the various non-preference-related values are associated with parks and protected areas management. Although the concept of carrying capacity was not explicit within the workshop reports, the latent perspective of establishing acceptable limits or objectives is rooted within the dialogue over the criteria, scoring and application of the assessment framework. An important consideration of this figure is the relationships among the non-preference-related values. Although they are considered exclusive, the different values help support each other through rationalized methods such as establishing norms and standards.

The main discourses related to non-preference-related values identified within the first workshop regarded the capacity to allow or support an activity, as well as how decisions made at an individual site may affect the rest of the national park system, specifically a concern over setting precedents. "*A caution that was brought up, a big concern is the idea of different decisions among different sites and setting precedents*". The counter-argument acknowledges the importance of considering local conditions and settings, as part of how the management decisions made at the site level fit into the overall system. The working group considered an activity, Zorb ball, where a person(s) enters an inflated plastic bubble and rolls over the ground, specifically down small hills. It was recognized that while an activity may be a suitable activity in one park "*you would not permit Zorb balling in a park full of cliffs*". The result sought is to identify principles and implement measures within the framework that allow for more rational, objective criteria for screening a recreational activity.

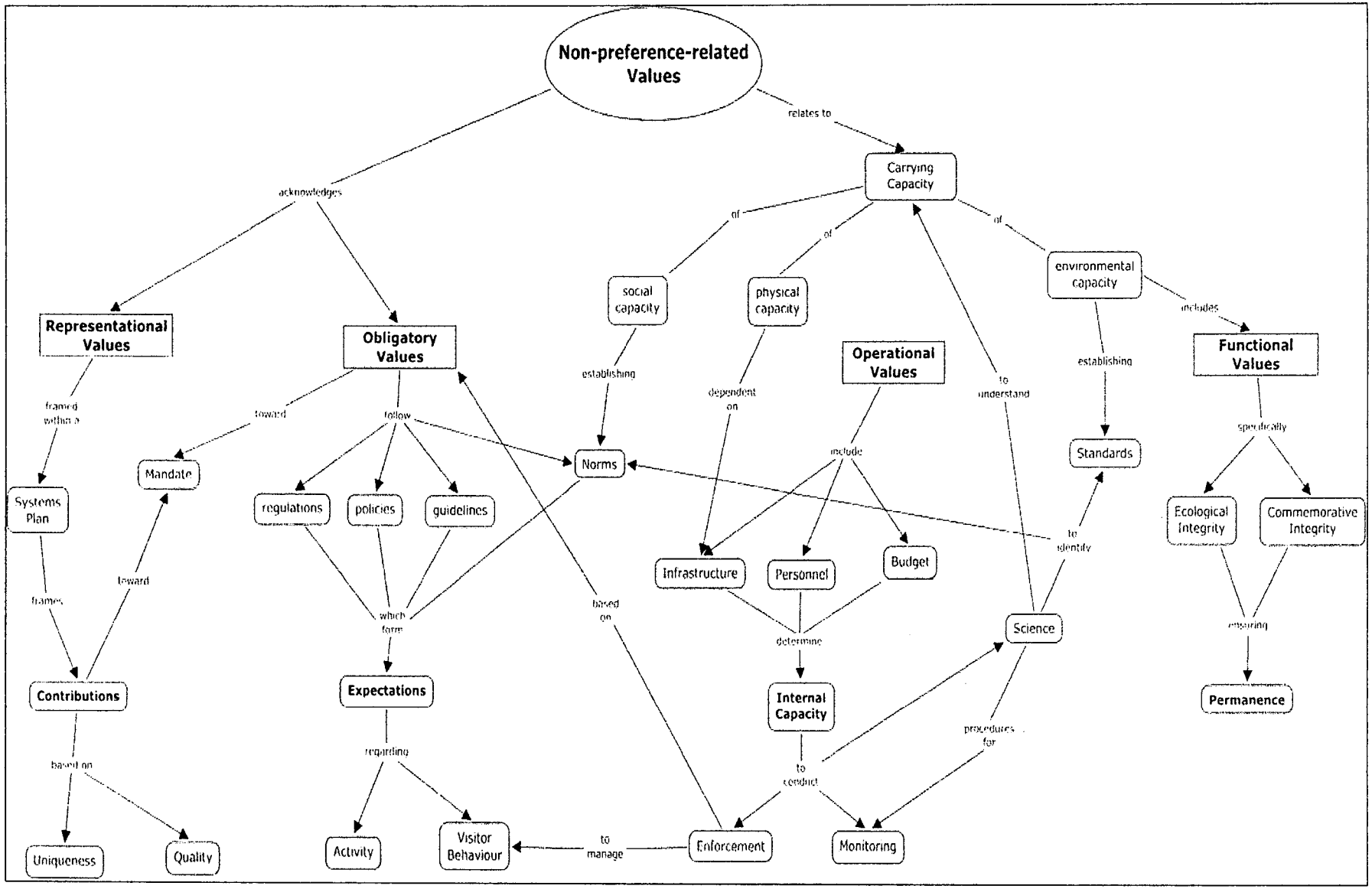

Figure 3: A concept map showing the non-preference-related values associated with protected areas management.

Preference-related Values

As discussed in the Scoping the Issue chapter, preference-related values are those desired qualities or conditions through assigned values relative to other objects, concepts or activities. In terms of assessing what each protected area site can offer, the working group recognized that *"when we start assessing activities, making it a judgment, we have to make sure it is not based on our personal opinions/perspective. We have to understand that our values might not necessarily be right".* Such an acknowledgement illustrates the importance of providing opportunities for meaningful public and stakeholder involvement and appreciating the value of alternative perspectives and solutions. "*The answer will always involve subjective determination built on values and social construct*".

Preference-related values were not a significant part of the working group's discussions during the first workshop, except during the group exercises to identify potential criteria for assessing a recreational activity. Since preference-related values are more value-laden, their purpose in the assessment process is to develop a frame of subjective criteria in order to facilitate relevant and responsive decisions. The five preference-related values explored were stewardship, economical, cultural, spiritual and recreational.

Stewardship value.

Protected areas provide distinct opportunities to promote values for the preservation and conservation of nature. Stewardship values have significant benefits toward gaining support not only for protected area management but also for species protection, which is best exemplified through initiatives related to the preservation of charismatic megafauna (e.g., polar bears). "*The best way I think to ensure ecological integrity is to get people to become passionately involved with the protection of the place and that is done through personal*

experience". The working group further identifies the role of local communities in providing stewardship over the protection of their protected area. An important criterion of the framework therefore is the promotion of recreational activities that facilitate such ties of "*ownership*". The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the stewardship values of a site:

- The activity enhances the value and respect that visitors and Canadians accord their national parks, national historic sites and national marine conservation areas.
- The activity presents opportunities to communicate about unique stories of and management challenges faced by the heritage place.
- The activity provides an opportunity for visitors to get involved in, or to visit more, heritage places.

Economic value.

The direct and indirect economic benefits of parks and protected areas are associated with the potential for tourism and sustainable development. Economic values are characteristic of local and regional economies and are not directly reflective of the internal revenue generation or operational considerations of Parks Canada.

The economic values expressed by the working group were specifically tied to established local and regional economies. The direct (e.g., tourism operations, such as guiding) and indirect economic benefits (e.g., employment) are briefly described during the first workshop and further explored during the second workshop. The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the economic values of a site:

- There are environmental, social and/or cultural benefits for local communities that are associated with this activity.
- The activity contributes to the regional economy in a long-term, sustainable way.
- The activity does not compete negatively with enterprises in the regional economy.

Cultural value.

Cultural values associated with Canada's parks and protected areas promote the communication of key messages through educational opportunities and interpretative programs and acknowledge the importance of significant natural and cultural heritage areas to the historical and social fabric of Canada. The maintenance of commemorative integrity, the potential for communicating important park messages regarding cultural heritage of the landscape, and the promotion of stewardship and conservation are examples of some of the primary goals related to the cultural significance of protected areas. These goals include working with Aboriginal peoples to include opportunities to learn and celebrate traditional activities and events.

The cultural value of recreational activities in Canada's protected areas is often linked specifically to opportunities for education through natural and cultural heritage appreciation. Throughout the development of the framework, the working group recognized the importance of opportunities for appreciation and understanding. The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the cultural values of a site:

- The activity presents opportunities to communicate about unique stories of and management challenges faced by the heritage place.
- The activity is considered to be acceptable within the local cultural context.

- The activity offers cultural benefits to local communities.

Spiritual value.

The incorporation of spiritual values recognizes the emotional and psychological significance of protected areas, especially to local communities and Aboriginal peoples. The spiritual significance of protected places is often strong and may be the reason why many people choose to visit them. Such values are typically associated with personal and group enjoyment and the appreciation or fulfillment directly connected to a specific place and/or activity.

Spiritual values associated with parks and protected areas were discussed modestly during the preliminary workshop. Traditional Aboriginal activities, particularly associated with Aboriginal use of a protected area site, were identified during group discussions as a screening criterion for evaluating activities. The essence of the proposed criteria was focused on how the activity being assessed would negatively impact traditional activities.

The second workshop however provides a richer level of input over the importance of spiritual values in parks and protected areas. The working group acknowledged the significance of experiences related to personal and group enjoyment, more importantly to '*evoke a sense of place*'. The working group further promoted the implication of such values by incorporating related criteria into two of the guiding principles: to sustain or enhance the character of place and to promote public enjoyment. No criteria were identified within the draft framework in specific relation to the spiritual values of a site. This value tended to be more latent as part of the intent behind the other expressed values.

Recreational value.

Recreational values are those physical benefits that are generated through the participation of recreational activities and associated experiences. Such values are exemplary of the direct use of park resources. As specified by the working group, recreational activities in protected areas may include both structured (e.g., soccer) and unstructured (e.g., cross-country skiing) activities, as well as special events (e.g., fishing competition). Activities also may be guided, by a Parks Canada or commercial operation, or be self-directed. Furthermore, the quality of the experience may be relative to each individual or group and may be considered to be linked to the specific location and conditions. For example, how challenging is a particular cross-country skiing course and did it meet the group's expectations?

Surprisingly, values associated with the recreational benefits of protected areas were not found to be significantly expressed. The responsibility to provide opportunities for activities, without significant negative impact, was implied but not explicit within the data. The following criteria, as developed by the working group, address the potential influences that an activity may have in relation to the recreational values of a site:

- Authentic and/or high quality opportunities can be provided for this activity.
- The activity provides opportunities for visitors to have fun and enjoy their visit.

An interesting underlying consideration expressed within the working group is the need for the framework to evaluate new recreational opportunities and initiatives in response to existing activities. "*We figured that because the activity, why would we even consider the activity if there was not already a "wow" or an enjoyment factor for them. We are just saying that is a given. Why would we consider providing an activity if we did not consider there to be a "wow". We are just saying it is inherent with somebody bringing an activity*

forward. So, we have to figure out how that impacts on other users." Similar to the functional value of recreational opportunities, the recognition of understanding the desired conditions and settings or recreational users and user groups is important in providing quality recreational experiences. "*Determining the experience visitors are looking for and understanding it.*"

Figure 4 shows the relationships between the different preference-related values associated with parks and protected areas management. Although the concept of use versus non-use values was not explicit within the workshop reports, the discourse surrounding why parks and protected areas are important and how they should be used is central to assessing what and where activities may be permitted. An important consideration to note from this figure is the linear pattern of the preference-related values. This was done to illustrate the mutually exclusive or siloed perspectives and approaches when addressing these values.

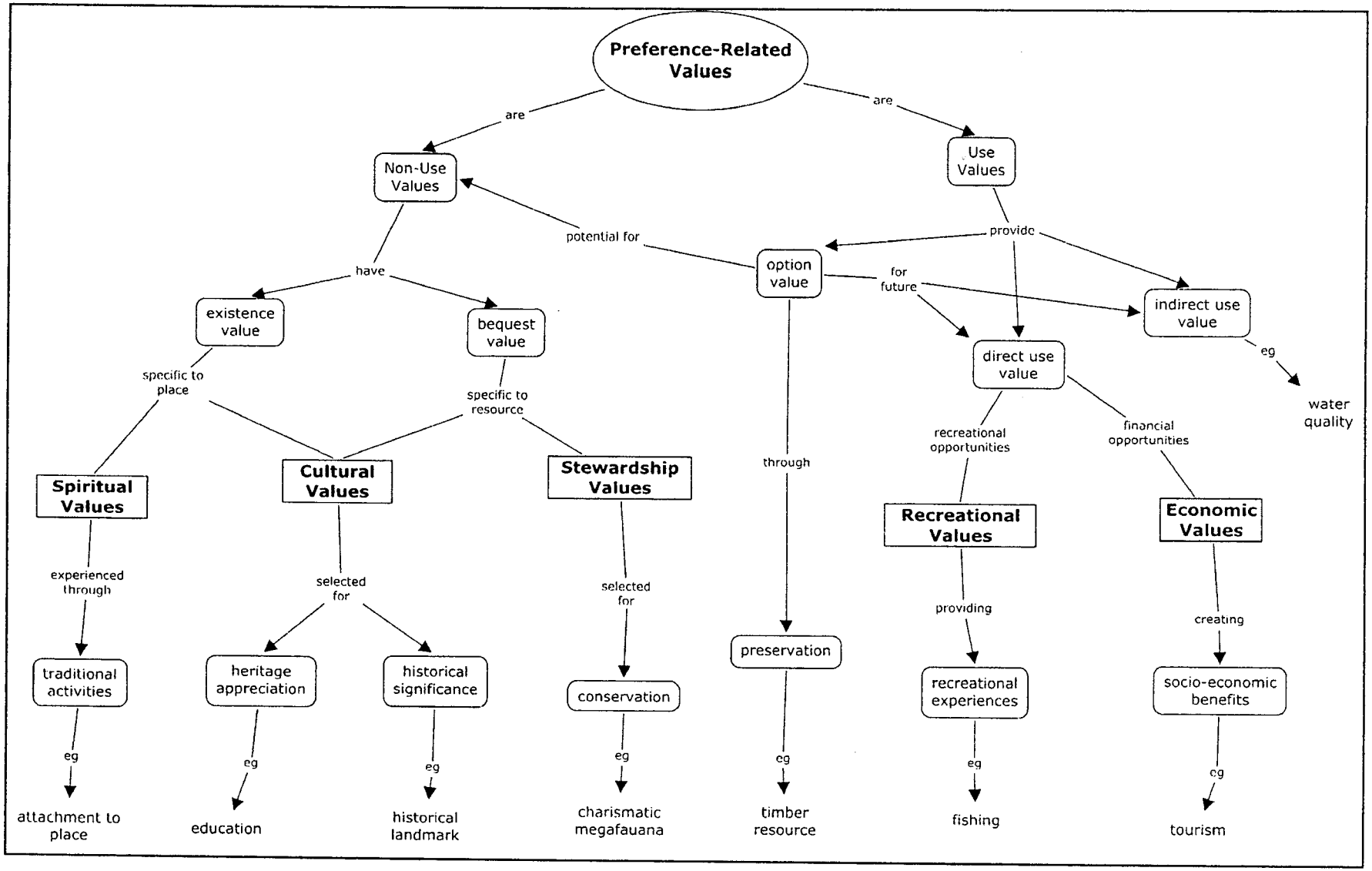

Figure 4: A concept map illustrating the relationships between preference-related values in relation to protected areas.

Principles of the Decision Process

The main discourses guiding the need and appropriate application of the recreational assessment framework fall into two screening categories: the scope of the activity and the interpretation of relevant legislation and policy. The scope of the activity, including the proponent, may dictate the initiating assessment level. As indicated by the working group, a request or determination for review of an activity for assessment may come at the field unit level or the national level and may have application at either or both. The scope of the activity may also be connected to its representative value. "W*here it goes for the national assessment, is that always going to be necessary if it is only occurring in one park or site*?" Since parks and protected areas represent many of the country's precious and unique features and landscapes, the appropriate course of action may dictate that a local assessment be conducted either prior to or in concert with a national assessment. Regardless, in most cases the working group acknowledged that there is a need to establish a national direction for all recreational activities.

The level of review also considers the screening of a proposed or existing activity against applicable strategic and management direction. At the national level, the activity is screened against required legislative commitments, as interpreted from acts and regulations and against strategic policy, as outlined in the applicable protected area system plan. Similarly, at the local level the activity is required to be screened against existing policy and planning commitments outlined in the management direction for the site. Table 3 outlines the proposed approach of the RAAWG for assessing recreational activities in Canada's national parks, historic sites and marine conservation areas.

1. DECISION TO ASSESS ACTIVITY WHO: FIELD UNIT
An assessment should take place when: • a new activity is proposed; • an existing activity changes significantly; • an existing activity presents new opportunities or areas of concern; or • a special event is proposed.
2. ACTIVITY SCOPING PHASE WHO: FIELD UNIT, WITH THE HELP OF THE VISITOR EXPERIENCE BRANCH & THE RECREATIONAL ACTIVITIES ADVISORY TEAM
• Description of the activity • Best available knowledge • Management planning context • Has Parks Canada assessed the activity before?
3. APPLY MANAGEMENT FRAMEWORK SCREEN WHO: FIELD UNIT. THE VISITOR EXPERIENCE BRANCH & THE RECREATIONAL ACTIVITIES ADVISORY TEAM WILL CONDUCT THE NATIONAL ASSESSMENT BEFORE THE FIRST LOCAL ASSESSMENT IS COMPLETED.
• Legislation and policy • Agreements • Management plans * If the activity is consistent with the management screen, proceed with assessment.
4. APPLY PRINCIPLE-BASED CRITERIA WHO: IT IS RECOMMENDED THAT THIS STEP BE CARRIED OUT AS A MULTI-STAKEHOLDER WORKSHOP, LEAD BY THE FIELD UNIT. THE VISITOR EXPERIENCE BRANCH CAN PROVIDE SUPPORT AS REQUIRED.
• Evokes a sense of place • Respects natural and cultural resources • Promotes public understanding, appreciation and enjoyment • Values and involves local communities
5. REVIEW AND APPROVE DECISION WHO: FIELD UNIT, VISITOR EXPERIENCE BRANCH & RAAWG
A) National Assessment - Reviewed by Recreational Activities Assessment Working Group (RAAWG) and approved by Director General, External Relations & Visitor Experience B) Local Assessment- Approved by Field Unit Superintendent after national decision taken
6. COMMUNICATE THE DECISION WHO: FIELD UNIT, VISITOR EXPERIENCE BRANCH
• Communicate national and local decisions internally and to the public as necessary

Table 3: The draft process for assessing recreational activities, as proposed to the Recreational Activities Assessment Working Group in Calgary (Parks Canada, 2006).

Regionalism in Decision-Making

The working group expressed concern over decisions made at the local level in regards to setting precedents for new or modified activities within the overall system. Will allowing an activity in one park have pressure to allow the same or similar activity in another? This may be considered to be a primary consideration when assessing an activity. The discourse over this concern is mainly resolved by putting the onus on establishing how the activity impacts values of a specific protected area. Such implications are ideally studied under local and regional conditions. A particular activity (e.g., sky-diving) may be found, using scientific methods and procedures, to have minimal potential for negative impacts on other activities and visitors and may contribute to the vision and management of a particular park (e.g., Banff National Park). On the other hand, using the same scientific techniques, the activity may be found to have major potential for negative impacts on other activities and visitors and be contradictory to the vision and management of another park (e.g., Point Pelee National Park).

> "*We have heard a great deal about adaptive management, decentralization of decision making, the importance of engaging local stakeholders in planning and decision making, it leads me to looking at the framework with the big question, 'are we, as an organization, comfortable with shifting some of the decision making authority to other places?' Are we prepared to handle the inconsistencies that will invariably follow concerning the management of recreational activities? As a planner, I believe we are going to have to be. If we really put an emphasis on local decision making, partnerships, meaningful long-term partnerships, we are going to have to be prepared to walk the talk when it comes to, say, we can use scooters in*

one location and not another and here is why it is important for us to factor that in. If we are not going to back that we should not develop a decision making framework that puts it in".

The importance therefore is placed on having a structured approach that recognizes local conditions and concerns but where there is consistent rationalization and transparency for the decision made. The purpose of the framework is to assess proposed activities within Canada's protected areas and to continually update our understanding of existing activities. The time-frame for conducting assessments is dependent on proposed activities which may evolve due to changes such as information or technology. The application and processes of the RAAF should be expected to occur at both the national and local levels. A principle-based framework is intended to ensure consistency between the protected areas and uses a decision tree to guide the decision process. Figure 5 illustrates the potential relationships between local and national assessment, in consideration of the dominant knowledge claims and values associated with them.

An important consideration from the figure is the roles that non-preference-related and preference-related values play between the local and systems level contexts. There is a need to acknowledge that the preference-related values help guide our decisions yet there can be a tendency to let the non-preference-related values to direct decisions. This may be due to the influences of having an agency with a hierarchal structure where the upper levels of planning and management have more control and interests at stake with the non-preference-related values versus the non-preference-related values. As a result, there may be tendencies to rely more heavily on the rationality of non-preference-related versus the situational aspects of the preference-related values.

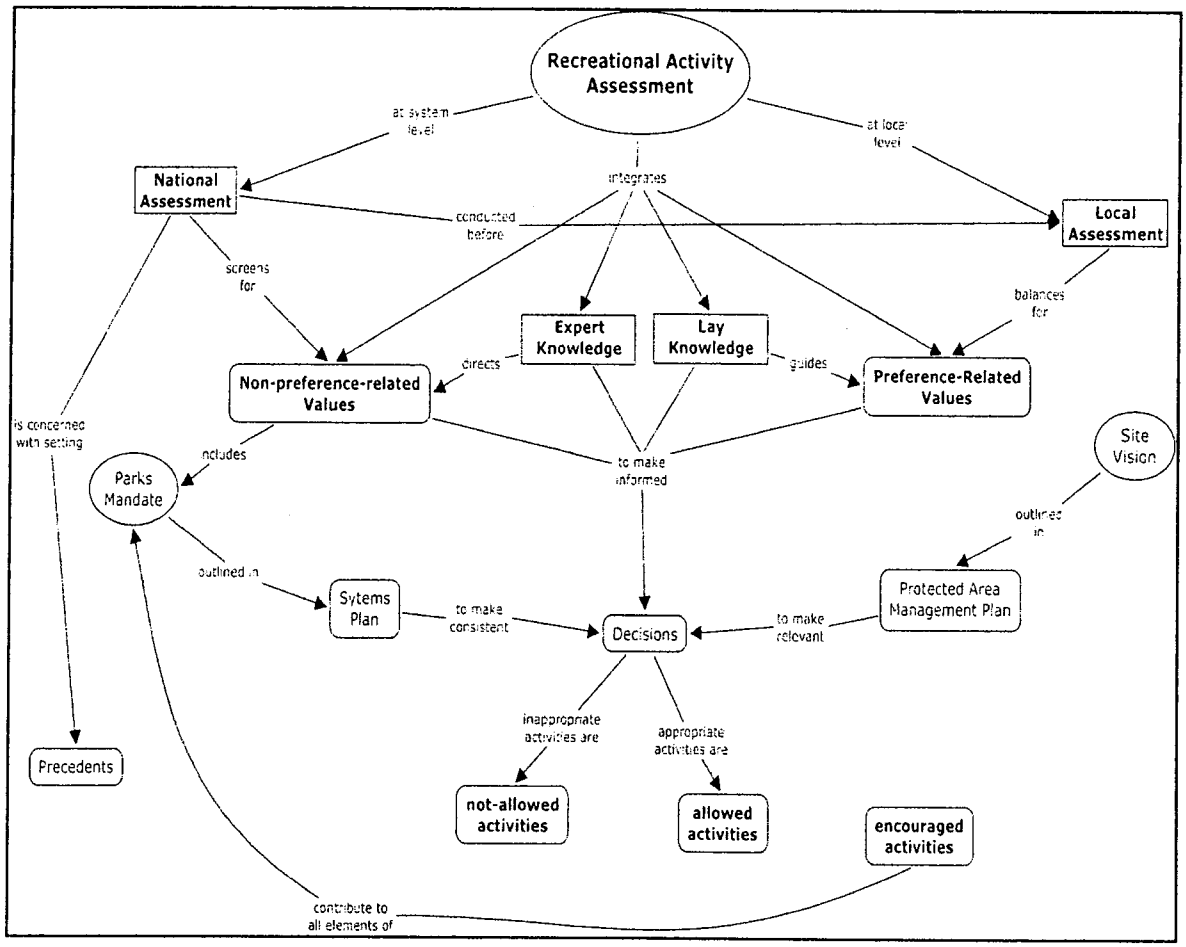

Figure 5: Concept map illustrating the relationships between national and local assessments and the associated knowledge discourse and valuation.

There are two fundamental questions derived from the working group's discussions concerning the contextual relevance of the framework: (1) what does the framework *need* to consider and (2) what does the framework *attempt* to evaluate? The prior question endeavours to identify and acknowledge essential information and outcomes for a particular activity. This is where the underlying principles and directions of the system are significant. The decision needs to consider legislative and political commitments, at the base, which are decided by all of Canadians. The latter question is to prescribe and outline such understanding and values related to the recreational activity that should be incorporated into

the decision. This recognizes the contextual component to effective application and acceptance of decisions.

Consistency through national direction.

Obligations to strategic and legal considerations, such as legislation and other commitments were a significant consideration for the working group. Particular concern was expressed over setting precedents, specifically regarding new activities, by making decisions in one protected area over another. This supported the notion that a separate screening process should occur at the national level to ascertain whether or not there are fundamental issues with an activity. "*We end up with guiding principles overall. A nationally consistent thing is what we are aiming for. This gives us national guidance. Then, a decision tree of questions that take us down to local considerations.*"

The purpose of the framework at the national level therefore is to establish a standard profile for every activity existing and proposed within Canada's system of protected areas. Activities are screened against current legislation, policies and procedures, as well as whether and how the activity contributes to the mandate of Parks Canada. Other planning and management processes that may have implications at the national level may include annual planning forums.

The underlying focus of the application of the framework at the systems level is primarily a rational decision process. The process looks to establish and organize expert information and knowledge and is therefore more content-dependent regarding the particular activity for review. The process is a transactive approach that includes national partners and interest groups that are interested primarily with issues at the systems scale. Concerns primarily revolve around whether the activity is congruent with legislation and strategic

directives explicitly outlined through applicable regulations and policies, as well as to the protected area's systems plan.

Relevancy through local guidance.

Discussions of the working group reflected the importance of the framework being flexible and conducive to local conditions, in order to make effective local decisions. A benefit of the new framework is the opportunity for increased autonomy of local decision-makers and processes to consider local conditions and values. Therefore the purpose of the framework at the local level is to assess the contribution or appropriateness of a proposed activity to the individual protected area. The process of the framework therefore is intended to be compatible with the current park management planning process yet be responsive to new recreational opportunities between planning cycles. A by-product of such an inclusive and responsive mechanism is increased autonomy at the local level by acknowledging the variable context of local considerations or values and conditions.

The underlying focus of the application of the framework at the site level is mainly a relational process. The process is significantly context-dependent and incorporates a greater level of flexibility in its decision frame. The process is also transactive in its approach as it fosters the inclusion of local communities and stakeholders into the decision process. The concerns relate to the individual site management plan.

Principle-based Decision-making

Requirement for an assessment.

"A significant underlying concept for the framework is that the assessment process is intended to be at a principle level". As such, a concern to consider is using the framework as

a management tool instead of as a planning tool. As proclaimed throughout the two workshops, the framework is intended to provide decision-makers with the best information, in order to make an informed decision. The strategies for managing a site or the system are part of larger planning initiatives and are part of the implementation and operational phases. A profound question from the working group is "*what constitutes the need for an assessment*?" The proliferation of an existing, acceptable activity may warrant the need to develop new or modify existing strategies (e.g., permitting system or zoning) for management but does it constitute the need to determine the significance of the activity to the site or to the system in general? . In the words of the working group, "*if the volume increases it is going to be dealt with at the park planning stage. We could not think of an increase in volume that would make an activity inappropriate. It may mean the location, or managing the use, would be different. It should not change the answer to the question, 'Is this an appropriate activity?' It would just be a change in levels.*" The application of the framework therefore is to provide a mechanism for determining the appropriateness of an activity through planning yet recognizes that management of acceptable activities requires continual monitoring and adaptation to reflect any spatial and temporal changes. Ecological and commemorative integrity can only be measured at the local level. The application of initializing and monitoring integrity however may also be misrepresented through 'state-of-the-parks' reporting and monitoring where values of protection are applicable only to the systems level. Such considerations link back to identifying what the desired outcome is intended to look like and what the management of an area is intended to accomplish.

Principles of the process.

The proposed framework developed by the RAAWG attempts to address these objectives for creating a useful process by considering the following factors: simplicity; inclusiveness; context; and, applicability. A recurrent theme expressed by the working group throughout development is the desired simplicity of the framework and the capability of it to be understood and utilized by people with different levels of expertise. The process for the framework also strives to involve meaningful participation by stakeholders and communities during local assessments and by partners and the general population during national assessments. The working group also addresses the need for the framework to work at both the site level in order to provide relevancy and at the national level to ensure consistency. Lastly, the RAAWG promotes the applicability of the framework in using the same format for assessing recreational activities in national parks, national historic sites or national marine conservation areas. Acknowledging the importance of the ability for participants to understand and contribute (i.e., simplicity) and the generic application of the assessment, the following sections will specifically explore further the roles of public participation and context in resource decision-making. The working group claims that the desired framework:

- *takes into account best available knowledge;*
- *is inclusive;*
- *looks at things through different sets of eyes (gender, cultural, etc.);*
- *is a resourceable process and implementation must be achievable (funding and time);*
- *integrates all three elements of Parks Canada mandate;*
- *takes into consideration the three elements protection/education/visitor experience;*
- *is simple and user friendly;*

- *has the capacity to be evaluated;*
- *leads to accountable and transparent decisions easily understandable by external stakeholders;*
- *has enduring principles that can accommodate activities occurring at different times and places;*
- *is flexible to deal with new and longstanding activities;*
- *provides clear national direction to enable local decisions;*
- *applies to NP, NHS and NMCA;*
- *takes into consideration regional and geographic and temporal differences; and, provides clear and concise guidance (plain language).*

Guiding Principles for the Assessment

The working group promotes the shift from the typical 'black box' approach to planning and management (i.e., insert activity variables, identify recommended management actions, and perform action) toward a more flexible, contextual decision process. A concern that was indicated during the preliminary workshop was the idea of screening while maintaining the ability to be adaptive and responsive. Simple yes/no scenarios, especially when considering an activity that is decontextualized at the national level, may inhibit new opportunities for trial or experimental adaptive management strategies. Such a concern is central when evaluating new activities which may expand the interpretation of existing legislation and policy and where there may be minimal expert knowledge to provide direction.

Another concern expressed was the potential for the desired future condition or experiences (i.e., park vision) determined at the local level may be significantly different than the position held at the national level (i.e., system plan). *"There are some strong lobby groups, despite how much we want to involve stakeholders and bring their opinions to the table, there are some things that might just not jive with the mandate of the park".* The use of guiding principles to evaluate the potential of new or modified recreational activities therefore was developed as a mechanism for ensuring that decisions are made consistently across the system while allowing for local relevancy. "*Develop some core principles that should go along with each of the [mandate] elements and have criteria under that.*" The four principles identified, and which provided the foundation for discussion during the second workshop, were the potential for the activity: to sustain or enhance the character of the place; to respect natural and cultural resources; to promote public understanding, appreciation and enjoyment; and to value and involve local communities.

Sustain or enhance the character of place.

The ability to sustain or enhance the character of the place is considered as how the activity contributes to the system plan and to the site's vision. The system plan involves ensuring that "*the activity is consistent with Canadians' aspirations for our country's system of national heritage areas.*" Furthermore, the working group submits that activities should strive to be consistent with the vision for the particular site, as developed through the management planning process. This principle illustrates the importance of representational and stewardship values of the activity in reference to the system and to the user or user group.

> *"By participating in the activity, visitors have the opportunity to discover and experience what makes the place they are visiting special. This experience evokes emotion in the visitor that results in enhanced value of and respect for the place they are visiting. The activity is consistent with Canadians' expectations for our country's system of national heritage areas and with the vision for the place expressed in the management plan."*

The intent of this principle is to promote activities that enhance the unique character of an area and that are compatible with existing activities. Discourse over the semantics of the guiding principle and associated criteria however shift the intent. For instance, by changing the wording from *Canadian's expectations* to *Canadians' aspirations* there is a shift from a non-preference-related value (i.e., what people expect of a park) to a preference-related value (i.e., what people want parks to be).

Respects natural and cultural resources.

The principle of respecting the natural and cultural resources of the site is intended to ensure that proposed activities strive to have minimal impact on the current ecological and social environments. Respectfully, the application of the principle may be correlated directly with the functional values for the site.

> *"Visitors who participate in the activity can do so in ways that respect the ecological integrity of national parks, the commemorative integrity of national historic sites and historic canals and the sustainable use of national marine conservation areas. Through the activity, they have the opportunity to experience the authentic natural and cultural resources that are being protected in these national heritage places for present and future generations. Activities that have*

significant impacts that cannot be mitigated will not be supported. Parks Canada and its visitors, stakeholders and partners continue to seek all solutions to avoid and mitigate undesirable environmental, social or cultural impacts that may be caused by the activity."

Promote public understanding, appreciation, and enjoyment.

The third principle is related to the cultural and recreational potential of the activity and the spiritual value of the site. This principle acknowledges that people often visit or use parks and protected areas in order to experience and enjoy the outdoors.

" *Participation in the activity provides visitors with opportunities to enrich their understanding and appreciation of the place they are visiting by providing engaging opportunities for them to connect with and enjoy Canada's natural and cultural heritage. The activity enhances public enjoyment, meets visitors' interests and expectations and reflects why national parks, national historic sites and national marine conservation areas are different than other heritage places. The activity can be done in ways that minimize negative impacts on the experience of other visitors. Participation in the activity may foster support of and involvement in the stewardship of Canada's national heritage.*"

Furthermore, exploration of the third principle indicates the working group's desire to look after current recreational experiences, in that new opportunities do not adversely impact them.

Value and involve local communities.

The last principle is related to the impacts that protected areas have on neighbouring park communities, especially the direct and indirect economic benefits. The principle also

explicitly acknowledges the contribution of local and traditional knowledge claims, as well as the importance of local stewardship.

> "*The activity respects the rights and values of local communities, property owners and Aboriginal peoples and provides opportunities for them to demonstrate leadership in the stewardship of Canada's national treasures. Visitors participating in the activity may contribute to long-term social, cultural and environmental benefits for these local communities. These visitors have the opportunity to interact with members of the local community and recognize them as enthusiastic ambassadors of the nation's parks, historic sites and marine conservation areas.*"

A detailed breakdown of the underlying criteria of the guiding principles is illustrated in Figure 6, with specific connections made to the mandate and directives of Parks Canada. The criteria outlined in the figure were derived from the draft framework in an attempt to represent the key elements that the working group used for the valuation of assessing recreational activities? The main concepts that were identified were related to the potential of an activity toward participation and contribution, as well as the three elements of the parks mandate of education, visitor experience and protection. The potential for the participation and inclusion of local communities and stakeholders in the decision process contributes to a sense of ownership or stewardship for the protected area.

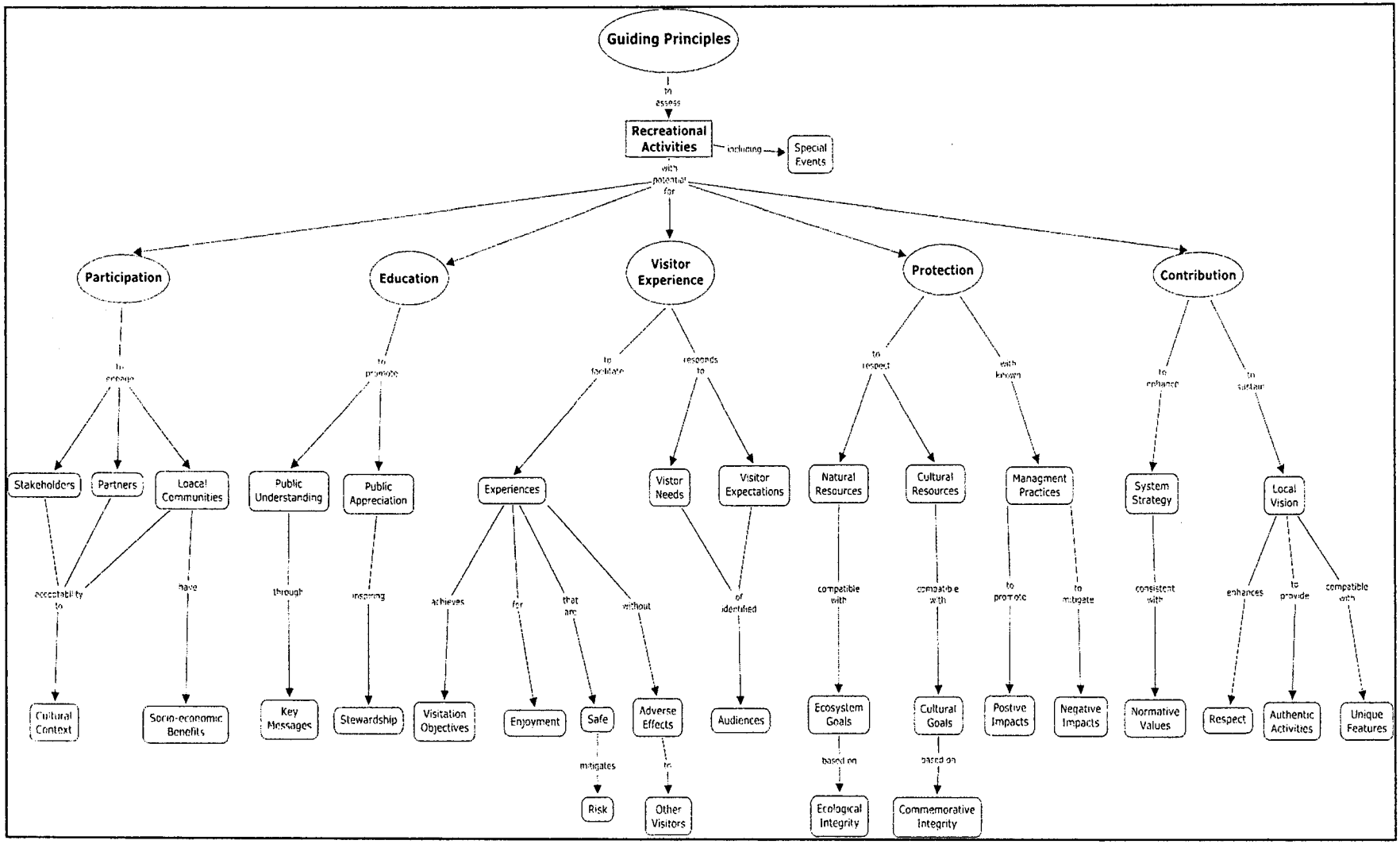

Figure 6: A concept map detailing the criteria considered in the assessment of recreational activities in Canada's protected areas.

The potential contributions of the recreational activity toward the strategic direction for the protected areas system and to the vision of the individual site were also recognized as significant factors in assessing the potential benefits of an activity. The probability of an activity achieving all three elements of the mandate is the ideal desired situation expressed by the group and may be encouraged or perhaps supported by Parks Canada. The circumstances surrounding special events consider both the short-term and long-term benefits and impacts of allowing the activity to occur, in reference to assessing new or modified recreational activities.

The contextualization or de-contextualization of knowledge claims provides the foundation for knowledge discourse by the working group. Acknowledging the limitations and relevancy of generalized knowledge claims, the working group explored the differences between decisions made at the national level versus decisions made at the local level. In order to capture the working group's understanding of the problem and collaborative efforts to produce a pragmatic solution, two discourses were explored within the data presented from the two workshop reports: the underlying knowledge claims for supporting judgments (i.e., how the group understands the issue) and the expressed elements for the valuation of recreational activities (i.e., valuation relative to the mandate). The following chapter presents an explanation of how the different knowledge claims may be incorporated into planning and decision-making processes.

The values associated with parks and protected areas were investigated. Although many of the values were introduced and debated within individual sub-groups during the workshops, each of the non-preference-related and preference-related values identified were evident in the draft framework. The values were also linked indirectly to the elements of the

mandate set forth by Parks Canada and the guiding principles developed for the recreational activities assessment framework. The relevancy of values at the systems level versus the national level will be further explored in the next chapter.

The properties of the framework are built on the premise that there will be a level of consistency across the system of parks and protected areas yet decisions are relevant to the local conditions and settings. Perhaps the desired consistency therefore is in the process and not the decisions. This significant proposition will be further explored in the following chapter.

DISCUSSION

The identification of differing knowledge claims and values associated with parks and protected areas is important but how can they be incorporated into making effective and respectful decisions. This purpose of this chapter will ground the concepts and themes examined in the Findings into the broader processes related to planning and decision-making.

The following sections are intended to better understand the role of contextualism in decision-making by further exploring the relationships between the concepts identified in the Findings section. Discussions over the theme of contextualization will be framed in relation to the application of the proposed Recreational Activities Assessment Framework: the context of the knowledge discourse; the context of the valuation of parks and protected areas; and, the context of the decision process. This will be done to explore the second objective of the study (i.e., relationships to the mandate and directives of Parks Canada). Specific references will be made to the aspects of applying the assessments at both the national and local levels, which outline the importance of considering the context of decisions made.

System versus Site: Context over Decision-Making

The system of national parks and protected areas in Canada was identified in the Introduction chapter, including the general background and legislation for each. In order to evaluate how the system works and how the RAAF fits within it, we must consider the aspects of such a system. So what makes a parks and protected area system? Davey (1998) indicates that there are at least five key characteristics of a system of protected areas: representativeness, comprehensiveness and balance; adequacy; coherence and complementarity; consistency; and, cost effectiveness, efficiency and equity. As may be

inferred from these characteristics, the primary focus is toward the non-preference-related values of each site as they contribute to the overall intent of a parks and protected areas system. The purpose is to ensure that the system is efficient and effective. The question therefore is how do or how can the various parks maintain a sense of exclusivity and autonomy within such a system? Rollins (1993) identifies five central considerations toward issues encompassing the parks and protected areas system: what is the purpose of parks and what is the value of a national park; how many parks should there be and where should they be located; how are natural resources to be managed; how is visitor use to be managed; and, how are decisions made about management issues? Each of these considerations is important to defining what makes such areas so special and what is the most appropriate direction to achieving those expectations? As identified in the Introduction, the roles of national parks, national historic sites and national marine conservation areas have evolved over time and continue to be redefined. The concept of how many parks are enough and what should be their designation(s) continues to be debated. The development of a system based on representation and cultural significance is becoming the dominant paradigm. How natural environments are managed has also developed with greater understanding of natural and social processes through science and technologies.

Rollins (1993) further identifies three realms for addressing such issues, which include legislation and policy; science and research; and, politics and power relationships. Each of these realms is implicit within the discourses surrounding knowledge claims and valuation of parks and protected areas and the degree to which they are employed to rationalize decisions may be relative to the context in which those decisions are made.

The two considerations to the system that are the focus of this paper are how visitor use is to be managed and how decisions are made about management issues? Both of these questions will be further explored through this section.

Context for the Knowledge Discourse

The following section encompasses the integration of expert knowledge claims and lay knowledge claims incorporated into determining how recreational activities should be assessed.

Although the first workshop was focussed more on expert knowledge, the working group recognized the contribution of local and traditional knowledge claims within the local context. The utilization of different forms of expertise and perspectives, as well as the roles of contributory and interactional expertise in decision-making may be further defined. Introduced in the Scoping the Issue chapter, contributory expertise is expressed as enough expertise to contribute to the knowledge base of the topic in question, noting that such cognitive authority can come in the form of either abstract/generalizable or local/practical knowledge (Carolan, 2006). This type or level of knowledge recognizes the input of both expert and lay knowledge, as a contribution to a functional knowledge base. Such abstract or generalizable knowledge being generated by expert sources may be expressed as decontextualized research methods and findings, in contrast to local or traditional knowledge as being central to understanding the local natural and social contexts.

Interactional expertise is a form of expertise that rests on having contributory expertise in the form of either abstract/generalizable or local/practical knowledge, while also having enough expertise to interact interestingly with those who possess contributory

expertise of the other form, thus allowing for important interactions to occur between the two (Carolan, 2006). As a result, the desired decision process is to include meaningful interaction between participants in order to achieve a mutually acceptable understanding of the issues and opportunities and commitment to possible solutions. This may be considered the most desirable form of expertise and that there should be an adequate number of participants who exhibit this level of expertise within any working group. These participants would have both a basic understanding of general expert knowledge as well as the ability to express that knowledge in a meaningful way to other participants, preferably within the context in which the assessment is being completed. This is considered to be important when forming groups to conduct local assessments, as well as identifying who should take part in national level assessments.

The Contextualization of Knowledge

The introduction of two assessment processes, a systems level and a local level, provides an opportunity for the respective groups making the decision to concentrate on developing their own understanding of the positive and negative impacts of allowing a recreational activity. At the systems level, the creation of a permanent Recreational Activities Assessment Team, with the inclusion of national and international professionals, partners and academics, will be able to ensure consistency throughout the system. At the local level, the use of local and traditional knowledge will allow for more contextualized decisions based on local understanding and conditions at the site and commitment to locally desired outcomes. The difficulty will be the interface of decisions made at the system and local levels. A specific concern that may be identified is that information and decisions made at the system

level may have the potential to dominate and ultimately direct decisions made at the local level. As Lee and Roth (2006) contend, scientific competence, the ability to know and describe what is to be taken as real, is one of the most important rhetorical fulcrums around which natural resource decisions are made or by which they are justified. A question to consider then is, in terms of establishing an expert knowledge base, who determines what is right (i.e., is there room for multiple-perspectives or interpretations)? Correspondingly, how do the knowledge claims affect the decision-making process and more appropriately how are the results viewed (e.g., are they credible)?

In an attempt to make science more democratic, Lee & Roth (2006) divide the processes of recognizing and decontextualizing of scientific discourse into two strategies. The first strategy is that generalized and context-independent discourse of scientific laboratories be localized, as decontextualized facts are not just adapted to the context but in fact reframed within the context of the community to rebut them (Lee & Roth, 2006). The first strategy may be linked to the idea of doing a system-wide assessment at the national level and then holding a local assessment. The result acknowledges the importance of reframing the decision in accordance with local natural and social conditions. The local assessment also provides opportunities for knowledge exchange, where alternative understandings and strategies may be created. Decision-makers must therefore acknowledge the generalized understanding of expert knowledge and recognize that the associated scientific information may assist with local assessments. Findings should then be recontextualized, where possible and/or feasible, to better synchronize with local conditions and contexts and provide validation.

The second strategy is for communities to enact strategies of resistance by attempting to discredit scientific claims that underpin an unpopular political decision (Lee & Roth, 2006). Perhaps this is best done through park planning and repositioning the predominant values associated with the vision of the park. This type of strategy is reflective of the political realm of issues solving proposed by Rollins (1993). This may also be especially linked toward visitor experience within the park. With such flexibility however there is an increase in the subjectivity of decisions. Figure 7 illustrates the prime contributory knowledge sources toward responsive decision-making in protected areas visitor management, as proposed by Farrell and Marion (2002) in their adaptation of a Protected Area Visitor Impact Management process. Farrell and Marion recognize the importance of including the public in defining the shared problem and, more significantly, in setting the preferred direction. Such recognition further indicates the contribution that the public can have when identifying values and issues at the protected area level. Interpretation of Figure 7 also acknowledges the role of expert knowledge in developing and implementing a strategic course of action. The importance of defining goals and objectives in the decision process is furthered in the decision context section of this chapter.

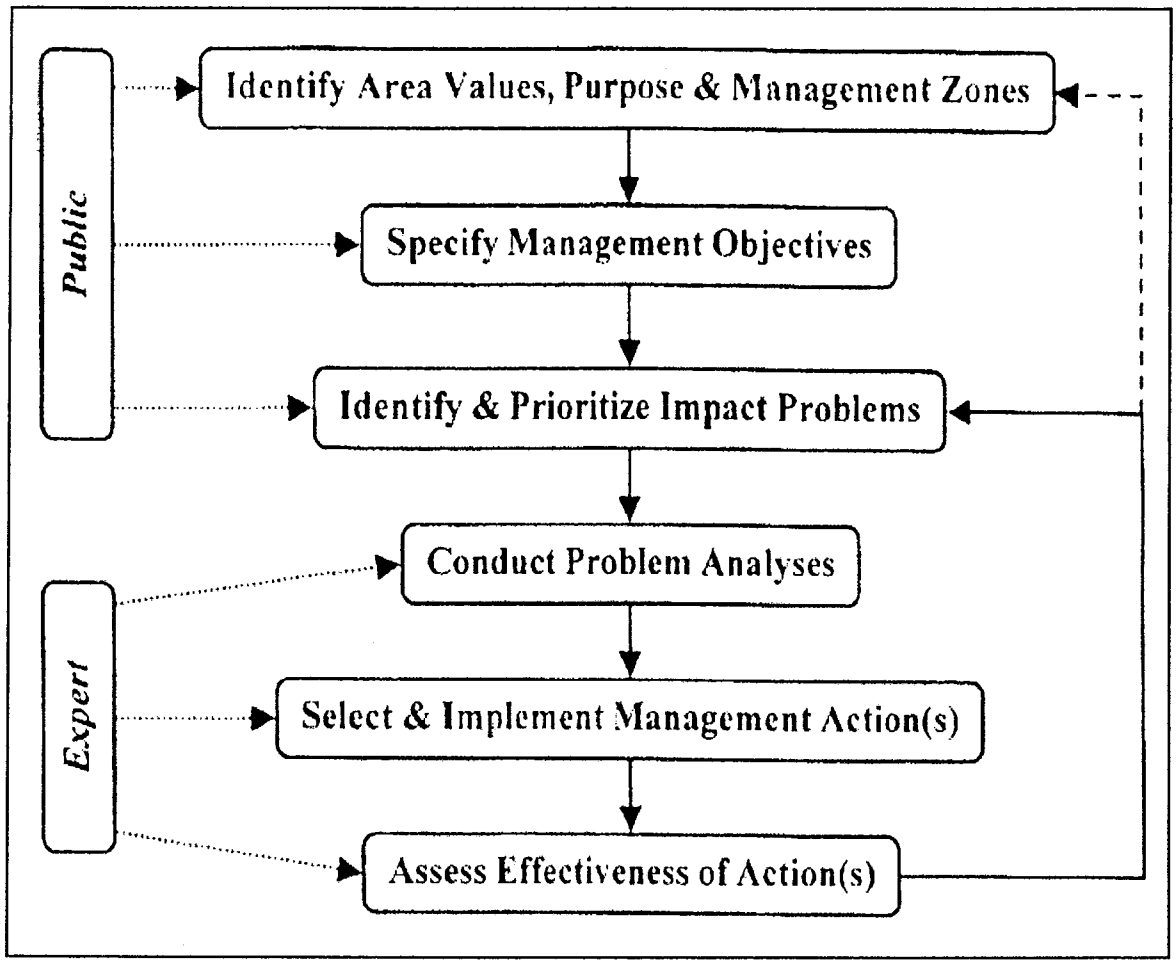

Figure 7: The Protected Area Visitor Impact Management Framework (PAVIM) (Farrell & Marion, 2002).

The inclusion of stakeholders and local communities in the process has been identified as a method of increasing transparency and sharing accountability for those decisions. In recognition of the contextualist principles outlined by Fambrough and Comerford (2006), there are some important considerations toward the formation and practice of future working groups:

1. Recognizes that stakeholders that are invited to the process have real input into the decisions being made.
2. There is an upfront recognition that everyone has their own set of knowledge

and values and those differences.

3. Recognizes that authorities still have responsibility over the decisions being made.

Parks Canada is still accountable to the citizens of Canada. Those responsibilities and the overlying directives should be explicit, outlined and acknowledged. A concern however related to conducting local assessments is that there is potential to disregard localized knowledge claims that are not tangible or that may even refute expert or generalized knowledge claims. The notion of "*outdated concepts and exhausted strategies*" identified by the RAAF working group however recognizes the need for external ideas and perspectives for creative and adaptive approaches. Table 4, Levels of Expertise, identifies the types of knowledge claims and their respective contextual application during resource decision-making. The table also includes the anticipated level of expertise related to each type of knowledge claim. The levels of expertise range from no expertise to contributory expertise to interactional expertise, as it relates to the issue at hand and the context in which it is being applied. For example, an individual who has extensive knowledge of the subject of interest and of the protected area of concern therefore has the highest level of relatable expertise. Such an acknowledgement recognizes the importance of identifying individuals and groups that will not only contribute to the knowledge base concerning a recreation activity but also to identify those who may be able to tie that knowledge to the applicable context and be able to communicate that to the group.

A potential drawback of such a system may however further alienate and/or diminish the utilization of publicly held knowledge. Lay knowledge is generally tacit within local individuals and groups. Transfer of information may take place through dialogue with other members of the group or through traditional forms of media (e.g., newspaper, newsletter, television, etc. The significance of local and traditional knowledge within the local context is high. Figure 2 (p. 90) is a concept map illustrating the relationships and cross-links related to the discourse between how the expert and lay knowledge claims are framed between the local and system contexts. The concept map further depicts the role of the various contributors to the collective pool of knowledge. The map also shows the interactional exchanges between expert and lay knowledge claims and the contributing tacit and explicit knowledge expressed by interested individuals, groups and organizations.

The importance of framing or reframing the assessment in accordance to the applicable context is introduced in the Scoping the Issue chapter. If the community knows and accepts the direction of the decisions being made, members of the community may be more receptive of management actions and feel responsibility toward the results. In other words, framing the assessment of an activity to the local context may work toward a better, more democratic and perhaps more sustainable position and direction toward environmental management in a multiple-interest-driven frame.

Context in the Valuation of Recreational Activities Assessment

The following section features the integration of non-preference-related values and preference-related values to determine how recreational activities should be assessed. Cost-

benefit analysis is the most widely used technique to assess nature conservation economically, even though it does not adequately capture the multiple values of biodiversity (Pearce and Moran, 1994). The following discussion also includes the exploration of how context is considered as a factor in making appropriate decisions.

Assessing and assigning the values of parks and protected areas requires the acknowledgement of three main propositions: that all aspects of a park are of value; that all aspects of a park are of value, but not of equal value; and, that active management and intervention in nature is inevitable (Eagles, 1993).

Incorporating Non-preference-related Values

The non-preference-related values are closely associated with establishing the supply of recreational opportunities and experiences. As such, interests regarding decisions at the national level are primarily considered with the non-preference-related criteria. Decision-makers at the system level are specifically interested with identifying what existing activities are generally allowed and with screening potential new activities or modification of those existing activities against standing responsibilities and commitments. As identified in the Findings section, national assessments are concerned with screening potential activities in regards to legislation, policies and procedures administered by the Government of Canada.

Decision-makers are also concerned with examining the capacity for allowing an activity and the extent in which it can be performed without adversely impacting park resources, services and other users. Carrying capacity is defined as the amount of visitor-related use an area can support while offering a sustained quality of recreation, based on ecological, social, physical and managerial attributes and conditions (Stankey & McCool,

1990). Carrying capacity includes both descriptive components (i.e., management parameters like the type and extent of use-related impacts) and evaluative components (i.e., value judgements about the acceptability of different levels of impacts) (Shelby & Heberlein, 1984). The importance of the evaluative component is often underrated or not made explicit, which masks the subjectivity inherent in the carrying capacity process.

Non-preference-related values are associated with objective, factual knowledge used to rationalize perspectives while making decisions. The first consideration is to identify the unique opportunities that parks and protected areas provide, versus other features and locations on the landscape- namely, representational. The second is to identify what is acceptable within parks and protected areas, which is directly associated with the laws and regulations as set forth by past direction and enacted through elected governments. The present expectations of Canadians' attitudes of parks should be outlined through strategic level documents such as a systems plan. The third element is the quality of the product, which is part of the functional and operational values. The functional value deals with the prospective environmental and social carrying capacities for the site. The last consideration is the operational values which deal with the capacity to support recreation activities through infrastructure and related personnel and services. Figure 3 (p.99) is a concept map illustrating the non-preference-related values used to make rational, fact-based decisions regarding recreational activities for protected areas management.

Integrating Preference-related Values

The preference-related values are closely associated with evaluating the demand for recreational opportunities and experiences. As identified in Chapter 2, preference-related

values associated with parks and protected areas may be separated into non-use values (i.e., activities that are not based on consumption or of the resource) and use values (i.e., activities that require the exploitation of the resource, such as recreational opportunities and their direct economic benefits). Use values may further be delineated into having either direct or indirect benefits. Direct use values include opportunities for the utilization of natural and cultural resources, such as activities related to recreational and educational experiences. Indirect use values, also associated with functional values, refer to the general services that natural and social systems provide, such as clean water and heritage protection.

In terms of the non-use values of parks, these may be broken into existence values and bequest values. Existence values may include spiritual values where the values associated with appreciation and enjoyment. Also, the fact that a park or protected area exists (e.g., Nahanni National Park Reserve of Canada) holds great value to some even though the majority of people will never visit the area. Bequest values are based on the perspective of protecting special areas for future generations, which is an underlying philosophy for the establishment and maintenance of parks and protected areas. Additionally, there is potential for an option value where the future use or non-use of the resource may be decided by the future population.

The direct and indirect economic values of parks and protected areas to remote communities and associated regional economies have become more established in studies of parks and protected areas (Gossling, 1999). Nelson (1994) further recognizes that concepts such as ecotourism, green tourism, and sustainable tourism development, are general in their nature and have to be described, planned, and assessed, in detail on the ground in terms of the socio-economic and environmental conditions applying in different places. Desired

experiences associated with recreational opportunities are part of why people choose to visit or use protected areas or any specific site. Gossling (1999) agrees that tourism and its high direct use value can play an important role as an incentive for protection.

The spiritual values associated with significant areas continue to be explored by experts, a fact acknowledged by the working group. Many people attend parks and protected areas for enjoyment and to reconnect with nature. Continued exposure and return may also create a sense of spiritual connection for an individual to a particular site. Similarly, cultural values are related to education and interpretation where the objectives are toward heritage appreciation and maintaining historical authenticity. Stewardship values are associated with the dedication of stakeholder and interest groups, as well as the general public toward the protection of special areas.

How can we bridge the principle values of a site with the mandate values of the parks and protected areas system? An important consideration by the working group was the promotion of recreational activities that "*enhance the character*" of a protected area. In addition to this idea, if each protected area is unique and is considered a systematic 'piece of the puzzle', then each area should provide unique opportunities to achieving the Parks Canada Mandate. Another consideration is the proposition that 'parks can not be all things to all people'. As an extension to this thought, protected areas can not be all things to the protected areas system.

Figure 8 provides a visual representation of how the various values might feed into the elements comprising the Parks Canada mandate, including some of the management considerations. The good of this figure is to provide an illustration of how the non-preference-related and preference-related values may be connected to the existing Parks

Canada mandate and directives. The figure also provides some indication of the overlapping values associated with each mandate element. An important consideration however with this approach to managing values is whether or not each type of value receives a similar weight or opportunity when making decisions. If so, then the mandate elements should remain balanced as shown below. If not, then the balance between the mandate elements may become skewed and certain activities may become either privileged or disadvantaged when making decisions. The question is: which recreational activities have a direct positive benefit for contributing to the protection mandate of Parks Canada? Perhaps there are alternative means for evaluating recreational activities that better utilize existing tools, such as zoning or facility development, for planning and management and recognize the intent and unique opportunities at the local level. The RAAF therefore cannot be screened against legislation in order to recognize all the local values.

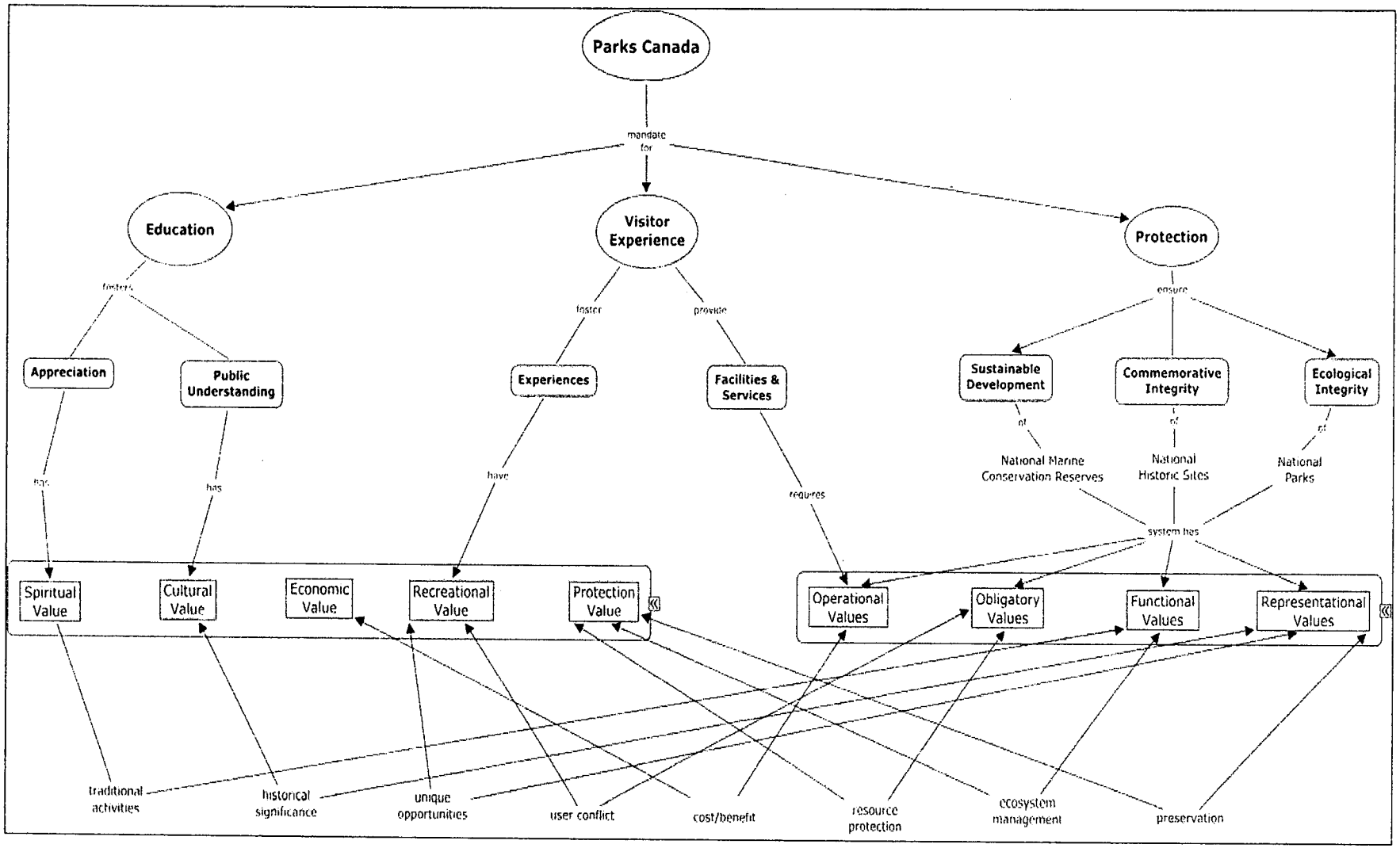

Figure 8: Valuation of elements and management considerations under the Parks Canada mandate.

Organizing Values: Classification and Zoning

The application of management objectives, policies and classifications, under comparable conditions and in standard ways is necessary to a parks and protected areas system so that the purpose of each unit is clear to all and to maximise the chance that management and use support the objectives (Davey, 1998). This relates specifically to the notion that having consistency regarding similar areas of interest may form a sense of expectation. As an example, preservation zones within national parks may be expected to have similar traits and management objectives, such as the protection of a particular resource. In order to mitigate bias and confusion on the application of the assessment within the given context, the expectation would also be relative to the activity being evaluated. In other words, what activities may be allowed may be relative to the pre-conceived bias of what is considered to be appropriate within that area type. Does skydiving make sense in a historic site? This is therefore also relative to the extent that policies and guidelines regarding a particular activity in relation to a particular class of protected area and/or zone may be formalized within legislation. As such, it should be recognized that, under site-specific circumstances, there may be contributions that activity makes to a particular element of the mandate (i.e., visitor experience) without adversely affecting the other elements of the mandate (i.e., education and protection). The most difficult aspect is the acknowledgement that all areas aren't the same, as they have a different set of natural and social conditions that may favour or resist certain activities or management options.

Assessing, planning and managing recreational activities should also recognize the contextual aspects of deciding appropriate directives and uses through protected area classification and zoning. Issues affecting the level of zoning in national parks (Table 5,

Zoning in Canada's National Parks), national historic sites and national marine conservation areas may include the development of facilities, access and infrastructure; location of attraction features, natural and social resource conditions; local community resource uses and other requirements; recreation activities; management intensity; and other economic, political and social considerations. Public input is initiated to develop a common understanding between land managers and the public on the protected area's purpose and management zoning (Farrell & Marion, 2002).

Zone Level	**Management Purpose**
Zone I - Special Preservation	Specific areas or features that contain or support unique, threatened or endangered natural or cultural features or values, or are among the best examples of a natural region. Preservation is the key consideration.
Zone II - Wilderness	Areas that are good representations of a natural region and will be conserved in a wilderness state. Perpetuation of ecosystems with minimal management intervention is encouraged.
Zone III - Natural Environment	Areas managed as natural environments, and that provide opportunities for visitors to experience a park's natural and cultural heritage values through outdoor recreation activities requiring minimal services and facilities of a rustic nature. Motorized access, where allowed, is controlled.
Zone IV - Outdoor Recreation	Limited areas capable of accommodating a broad range of opportunities for understanding, appreciating and enjoying the park's heritage values and related essential services and facilities, in ways that impact the ecological integrity of the park to the smallest extent possible. Direct access by motorized vehicles is allowed.
Zone V – Park Services	Communities in existing national parks that contain a concentration of visitor services and support facilities. Major park operation and administrative functions may also be accommodated in this zone.

Table 5: A table of levels of zoning in Canada's National Parks (Parks Canada, 1994b).

The integration of visitor management and recreational activities that support all elements of the mandate in a sustainable and equitable manor is considered as an ideal desired outcome. It is important to note however that national parks, national historic sites and national marine conservation areas may be prospective to have multiple areas of interest and therefore provide a variety of recreational opportunities relevant to each site. As an example, photography may be considered as an appropriate activity across all protected areas

and management zones yet certain sites or protected areas may provide a more significant or unique experience. Ryan (2001) submits that 'sustainability' is insufficient as an objective, and recommends that managers within the realm of tourism should be looking to add value for environments, communities, entrepreneurs and tourists. In order to estimate the appropriate supply of opportunities for an area, the three general categories described below may be devised to incorporate common values in order to promote specific aspects or characteristics of an activity and its environment.

Areas of Resource Use

In an attempt to provide an alternative model that recognizes the different resource uses in parks and protected areas, three Areas of Resource Use are proposed (Areas of Conservation Interest, Areas of Social Interest and Areas of Recreation Interest) as an attempt to bridge the variety of identified values, recognizing the diversity of sites and their corresponding vision and contribution to the overall protected areas strategy (Figure 9). These areas may provide a more effective and fair means for focusing the evaluation of activities by recognizing the objectives and opportunities of individual sites at the local level.

Areas of Conservation Interest

An Area of Conservation Interest provides recreational opportunities with a strong potential for promoting protection of natural and cultural resources. Such areas may be considered for promoting ideas of preservation and conservation through a fervent representational, spiritual and stewardship valuation of the resource. Areas of Conservation Interest house unique features and landscapes that are considered as important to Canadians with the protection of key species, biophysical landscapes and resources being the primary

focus. These areas should be considered for a higher level of protection with significant efforts made to maintain or restore their values.

Areas of Social Interest

Areas of Social Interest provide recreational activities that promote and celebrate the integrity and authenticity of an area. An Area of Social Interest provides recreational opportunities with a strong potential for understanding through obligatory, functional and cultural values. Such areas are expected to have significant natural and cultural heritage values that provide opportunities for education and appreciation. Information and education for both local residents and tourists are essential for ecotourism (Gossling, 1999). These areas should focus on a variety of services for presenting natural and cultural heritage values and providing opportunities for connecting people to their rich natural and social environments.

Areas of Recreational Interest

An Area of Recreational Interest provides recreational opportunities with a strong potential for high quality visitor experiences. Such areas offer recreational services in order to provide unique opportunities for enjoyment by considering the recreation, economic and operational values of the site. This recognizes the potential for areas with the capacity to provide unique natural and social environments for supporting sustainable recreational and tourism activities and experiences. The focus of Recreational Areas therefore should be to encourage new and meaningful ways for people to recreate in parks. An emphasis on allowing activities that utilize the unique features and settings should be considered, so long as any required precautions and/or conditions are set and that the resource values and other existing uses are not adversely affected.

Areas or sites that can effectively provide opportunities for promoting conservation, social and recreational interests are considered to contribute positively to all elements of the mandate and may be candidates for sustainable tourism enterprises, such as ecotourism (Gossling, 1999) or geotourism (Newsome & Dowling, 2006). In respect to the sustainability of such use and non-use values, careful planning and management procedures are needed not only for ecotourism but indeed for all forms of tourism and recreational use. These procedures and conditions required for tourism planning include: setting of goals and objectives; research to provide a good understanding of relevant ecological and socio-economic systems; concern for efficiency; environmental education; employee involvement; codes of ethics; and monitoring and assessment procedures (Nelson, 1994, p.248). The inclusion of some of these general procedures and practices into decision-making and the RAAF are examined in the following section.

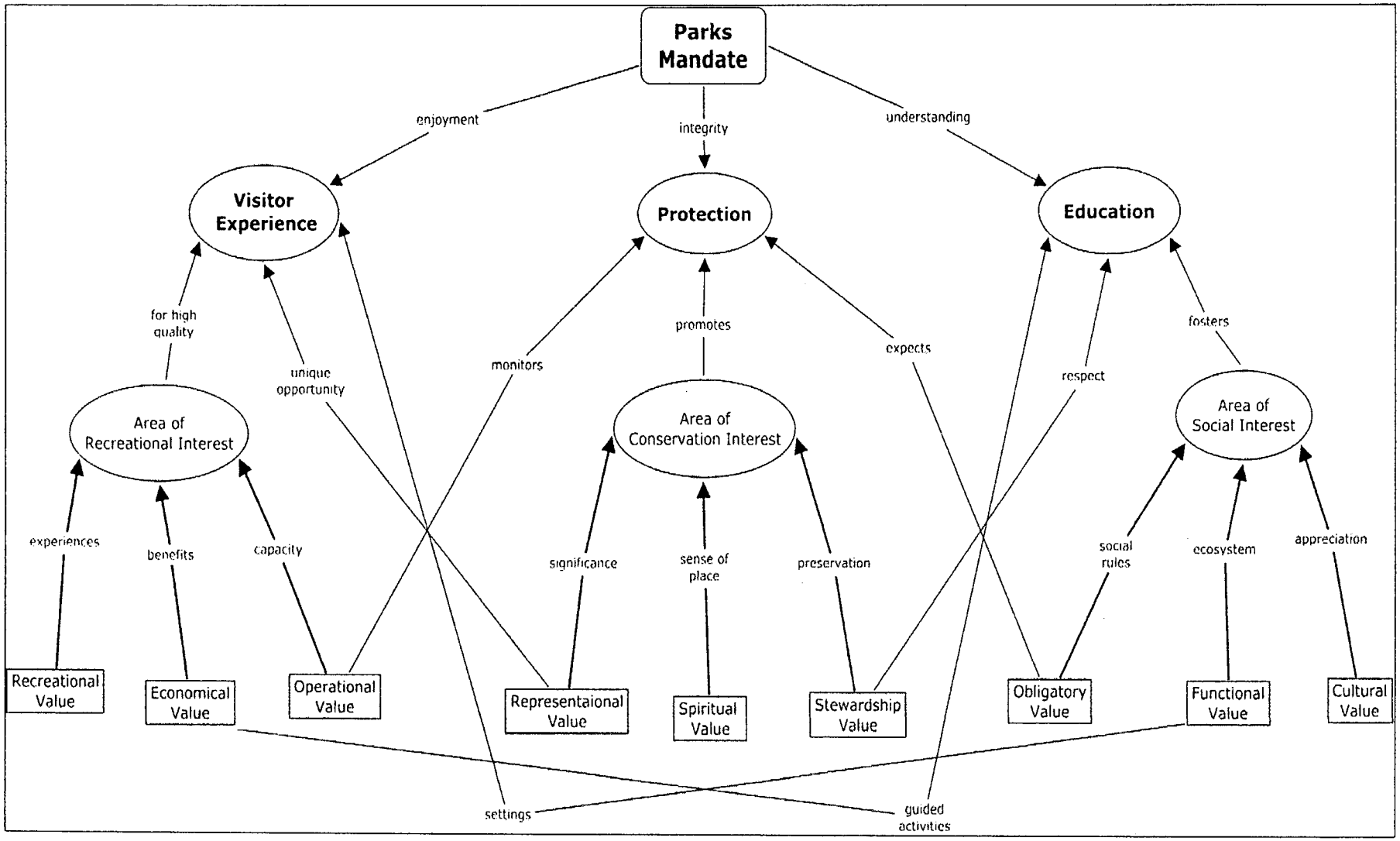

Figure 9: A model illustrating the recreational values in relation to the Parks Canada mandate using Areas of Resource Uses.

Context of the Framework Decision Process

An Adaptive Process to Decision Making

Since ecological and social systems are extremely complex and are continually changing, a uniform approach is not workable and there needs to be a range of different solutions responding to different environments and to the many different social and cultural contexts (Davey, 1998). The preferred direction for planning and management therefore must also change and be adaptive to the changing environments. As proposed by Lessard (1998) there is an interconnected series of key elements to adaptive management: defining a desired future condition; establishing goals and objectives; planning scenarios and hypothesis development; decision-making and implementation; and learning, monitoring and evaluation. A representation of the elements of adaptive management, as proposed by Lessard, is exposed in Figure 10.

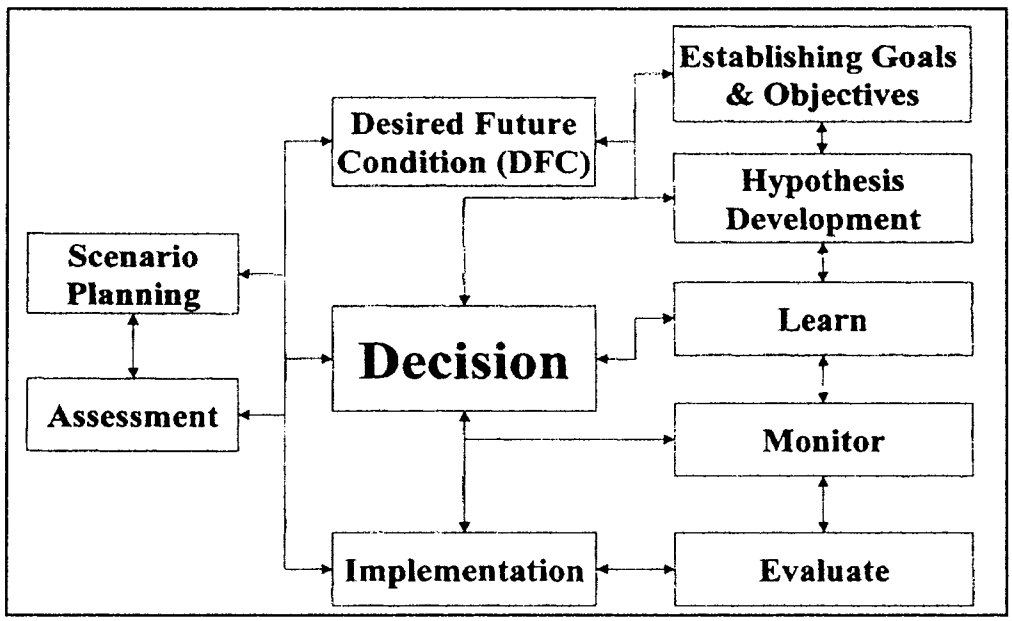

Figure 10: An adaptive management framework (Lessard, 1998).

Establishing the desired future condition is a fundamental part of park management planning. Defining the preferred state and utilization of the resource is integral to making

effective decisions and subsequently taking the appropriate course of action. The process is best described through the park management planning process, in which a vision for the site is established. The desired future condition may be a coordination of both preference-related and non-preference-related values. As discussed in the Findings section, the inclusion and active participation of public stakeholders is integral to understanding the local conditions and concerns, illustrated in Figure 11. The role of public participants is effectually part of developing effective advisory capacity that recognizes the contribution of local and traditional knowledge, as part of the contributory expertise for making decisions.

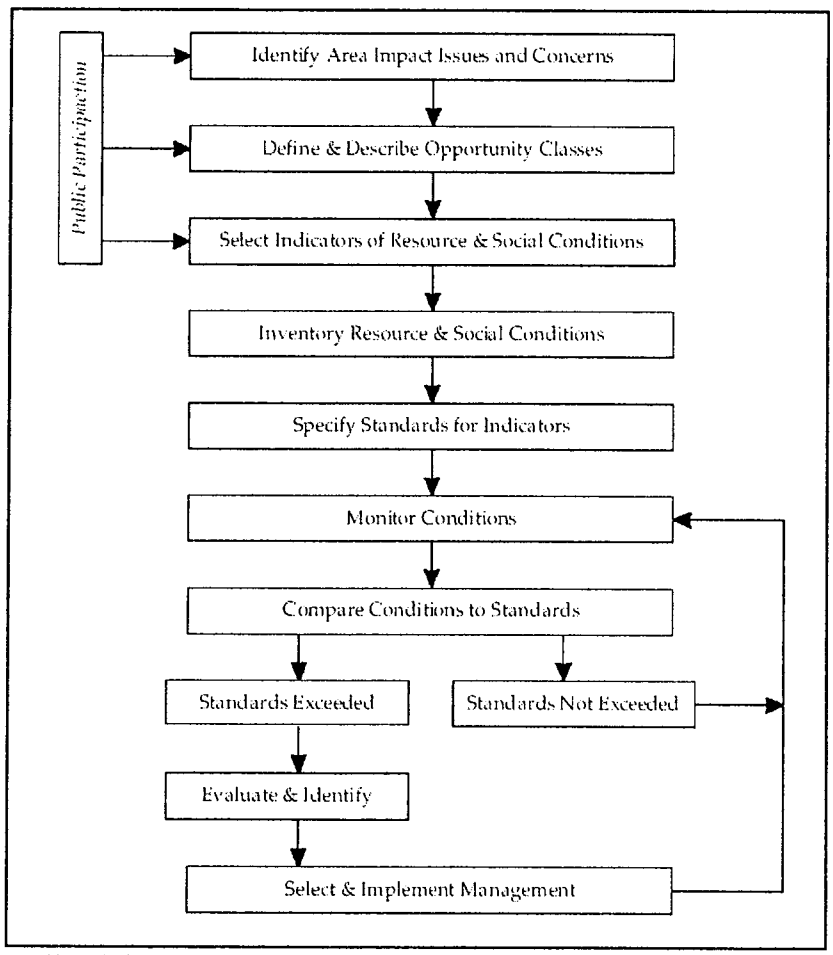

Figure 11: Generalized description of visitor impact management framework (Adapted by Moore et al, 2004).

Establishing the goals and objectives of a site is also a significant part of making both rationale and relevant decisions. The goals and objectives are specific to a site; however they are also rooted within the planning for the system (e.g., guiding principles), which are concerned specifically with the obligatory, functional and representational values of the protected area. Decisions made on recreational activities are considered in reference to how the activity is expected either to achieve or to fail the established goals and objectives. The goals and objectives are also reflective of the systems strategy or the park or protected area vision. The ambiguity of principle-based decision-making versus the certainty of element-based decision making may also be examined. The advantage of the element-based criteria (i.e., mandate elements) is that they may defined and organized in more consistent terms than the more ambiguous, principle-based criteria (i.e., guiding principles). As an example, the element of *protection* may be precisely defined for general acceptance, as well as a series of factors and indicators may be established to ensure consistent understanding and measurement of that protection element. A disadvantage of this perspective however is that such elements tend to become 'silos' making it more difficult to recognize overlapping concepts and issues between them. Alternatively, the ambiguous nature of principle-based criteria, such as *character of place*, does have advantages at the local level. This method recognizes the inter-related, complex connections of criteria and may recognize more subjective measures during decision making. Principle-based criteria also require some level of common understanding of the specific issue or activity.

Hypothesis development and scenario planning are associated with the scientific research conducted by experts both internal and external to the Parks Canada Agency. Understanding the functional values of the resource includes the use of either experimental or

passive scientific research.. Academic knowledge toward enhancing scientific observation and measurement of ecological and social factors can be beneficial to the development of rationalized planning and management direction.

The decision and implementation processes involve the performance of a selected course of action in order to achieve the desired goals and objectives. Using the RAAF to help make decisions and facilitate implementation of the activity is an example.

In order to work, decisions made at the site level need to have their own level of autonomy and not be directed from the system level. This would allow for non-standard, site-specific options to be considered and tested, which would allow for a greater level of innovation and relevancy to decisions. Such decisions may also provide unique opportunities within the system, as long as they are shown to contribute to the mandate and do not adversely affect current and future desired outcomes. Discussion by the working group to recognize the subjective nature of decision-making and of flawed past practices is also an important note. The traditional use of ranked matrix systems to determine the appropriate course of action is an example. The working group recognized this fault as the problem with ranking methods as they can often be manipulated to suit a person's desired course, which undermines the intended objectivity of the scoring. By recognizing the relative importance of each value to the park or protected area up front, a more transparent method for assessing the appropriate course of action and recommended decision may be presented. As an example, a unique feature representative of a park is considered to have a high probability of being adversely impacted by a proposed recreational activity. The determination of such understandings and subsequent recommendations through respectful dialogue may provide enough justification for either not allowing that activity to occur or to adopt specific conditions on use and

development. This may be considered a more preferred, respectable conclusion than skewing a rating system to achieve the same result.

Learning, monitoring and evaluation signify the mechanisms for adapting to changes on the landscape, such as the operational value of monitoring the condition of the resource. Changes may occur to any element of the adaptive management process. As an example, the presence or condition of a resource may diminish and so require modifications to the objectives for the site. Such processes tend to be laden within the realm of expert knowledge claims and processes; however, the role of lay knowledge in informing these processes should not be overlooked. Moore et al. (2003) indicate that performance reporting, based on assessing the achievement of objectives by identifying and measuring indicators and standards, is a crucial concern within [visitor management] frameworks; however, none of the most common frameworks have been explicitly applied to the performance reporting that is increasingly being required of public land managers. Moore et al. (2004) further propose four objectives that indicate the usefulness of a visitor management framework:

- The framework can be clearly understood and used by policy-makers, politicians and natural area managers;
- The framework has explicit provisions for involving stakeholders in one or more of its steps;
- The framework can be applied at different spatial scales – from an individual tourist site, through to a whole natural area such as a national park, or to a group of parks;

- The framework can be applied to a range of settings – from marine to terrestrial, from natural areas inhabited by people to unoccupied areas, and from undeveloped, pristine sites through to resorts and marinas.

As indicated in the Findings, the consistency of the framework therefore is in its process. The recreational activities assessment process is not intended to dictate how decisions are made but to provide a consistent framework as to how decisions should be approached and what needs to be considered in order to be relevant. The result is a framework which is both consistent and relevant at both the system level and the local level.

CONCLUSION

The range of natural, societal and nature-human interactions of contemporary environmental management, especially for parks and protected areas, is seemingly infinite and is continually changing in scope and complexity. Although natural processes are a significant consideration toward environmental management, the field is wrought with social issues and value-based decisions. This research project proposed methods that worked to effectively make such knowledge claims and expressed values more explicit. The development of a new Recreational Activities Assessment Framework (RAAF) by Parks Canada provided a unique opportunity to examine a formal planning process in the field of protected areas management, in which the working group responsible for the development of the new framework was comprised of a diverse group of agency, academic and non-governmental participants

In order to capture the working groups understanding of the problem (Objective 1) and collaborative efforts to produce a pragmatic solution, three discourses were explored within the data: the processes in which knowledge and values are incorporated and decisions made; the underlying knowledge claims for supporting judgments; and, the expressed elements for the valuation of recreational activities. The contextualist factor of considering both spatial (i.e., system to site scales) and temporal (i.e., changing environmental and social trends) contextual dynamics provided the basis for examining the framework development.

Subsequently, the values identified and examined were discussed in regards to participative planning processes as well as toward the Parks Canada mandate and directives (Objective 2) and new Areas of Resource Use proposed.

A Case Study for Recognizing the Context of Knowledge and Values

This case study explored the initial proceedings of the RAAF working group, as compiled in two workshop reports, in order to construct a series of theoretical maps that illustrated the various knowledge and value concepts that are part of the decision-making process. The concepts and themes were developed and categorized with qualitative techniques using thematic coding. Furthermore, there were two main objectives delineated for the study: to explore how the working group understands the issue and to put the associated values in relation to the Parks Canada mandate.

Capturing the RAAWG's Understanding of the Problem

The working group valuation of parks and protected areas acknowledged that the desired outcomes of management decisions are essentially subjective in nature. Three realms for addressing environmental management issues were identified in the Discussion: policy and legislation; science and research; and, political and power relations. Each of these realms was found to be implicit within the discourses surrounding the knowledge claims and valuation of parks and protected areas. The degree to which they are employed to rationalize decisions may be relative to the context in which those decisions are made. Recognizing this understanding, the study proposed that there is a variety of values that go into making such subjective determinations, which can be generalized into two categories: non-preference-related values and preference-related values. These values help us to shape what we want and expect parks and protected areas to be and to provide.

Interpretation of the working group's discussions indicated that the primary purpose of the new recreational activities assessment framework is not to replace elements of the

local management planning processes, which are already geared toward establishing a responsive desired future context, but to specifically augment decisions being made on the appropriateness of recreational activities within the site's current context. The principles of the framework are built on the premise that there will be a level of consistency across the system of parks and protected areas, yet decisions are relevant to the local conditions and settings. Perhaps the desired consistency therefore is in the process and not the decisions. As consistently indicated by the working group during the workshops, local assessments are not supposed to strain public and stakeholder involvement but to provide a better mechanism for inclusion in the decision-making process.

Incorporating Expert and Lay Knowledge Claims

The purpose of the framework at the national level is to establish a standard profile for each activity within Canada's system of protected areas. Within the context of the local level, the framework strives to frame the activity in relation to local conditions and concerns. At each level, activities are screened against current legislation, policies and procedures, as well as whether and how the activity contributes to both the mandate of Parks Canada and the vision for the site. Other knowledge and expertise exchange processes may also have implications, including open houses and planning forums. A movement from specifically contributory expertise to interactional expertise therefore is becoming crucial, with the involvement of partners, stakeholders and public individuals within the decision-making process. This participatory approach to public or stakeholder involvement in the decision-making process recognizes the importance to establishing a common understanding of such complex problems and a collaborative commitment to a solution.

Expert knowledge.

Expert knowledge, typically more formalized ways-of-knowing through science and/or procedure, is continually recognized as being essential to resource decision-making, which includes authoritative, professional and academic knowledge claims. Authoritative knowledge is the explicit and tacit knowledge internal to the governing agency and is grounded by organizational knowledge development through practice and experience and through internal research and monitoring programs. Professional knowledge was regarded as the external expertise formulated outside of the applied context yet may provide relevant advice toward understanding potential consequences or considerations of decisions made. Academic knowledge was identified as being instrumental in developing sound scientific procedures and recommended practices, both through theoretical exploration or pragmatic discussion.

The development of partnerships between professional organizations and knowledge exchange with other government agencies responsible for protected areas management was found to be a key concept identified by the working group. The ability to make informed, defensible decisions is considered to be a central part of what the RAAF is intended to accomplish. The focus toward information transfer and management is evident, with an emphasis on capturing and communicating both formal and informal expert knowledge processes, including the contribution of various expertise and science. A critical consideration of this perspective however is the credibility of using expert knowledge alone promotes the use of preference-related values and control at the system level. By incorporating other multiple forms of knowledge and perspectives, there may be an

opportunity to balance alternative ways of knowing and preference-related values, providing a greater level of transparency and relevancy to the decision process.

Lay knowledge.

Alternately, lay knowledge is a context-dependent 'way-of-knowing' where understanding is unceremoniously linked to experiential observation and narrative, which includes local and traditional knowledge claims. Local knowledge is held by the local communities and stakeholder groups that have interest in a site. Such knowledge is described as being gained through experience and is specifically relevant within particular spatial and temporal contexts. Traditional knowledge is specific to a place yet is not limited by any temporal context and is consistent with the stewardship, cultural and spiritual values of a site through longer-term contextual commitments. The use of lay knowledge claims during the two workshops was minimal due to their purposes and objectives. The inclusion of such knowledge may be more evident during the application of a local level assessment.

Interpretation of the first workshop report indicated a focus on what needs to be part of the national level assessment, including how the different forms of knowledge claims are included. The result was a national level assessment process that relies heavily on expert knowledge and a generalized understanding of the implications and opportunities regarding a particular recreational activity. Figure 2 (p.90) illustrates the role of tacit and explicit forms of knowledge and the central importance of opportunities for knowledge exchange to foster the integration of lay and expert knowledge. This recognizes that all the various knowledge claims are simply inputs into a common understanding within a given local or system level context.

Valuation of Recreational Activities

During the analysis of the workshop reports and draft recreational activities assessment framework, the values associated with parks and protected areas were delineated into two main categories: non-preference-related values and preference-related values. Scientific understanding of both facts (non-preference-related values) and values (i.e., preference-related values) were considered as providing the appropriate empirical base for effective natural resource management decisions and policies.

Non-preference-related values.

Non-preference-related values were considered as those values that relate to the strategic aspects for planning and managing parks and protected areas. As indicated, these values are factual-based and supported through scientific rationale and best practice. There were four concepts identified that related to strategic recreation planning and management: representational value, obligatory value, functional value, and operational value.

Representational values are used to identify the unique characteristics and features of an area and correspondingly the unique opportunities for recreation that may occur within the specific area. Fundamentally, unique opportunities are derived in respect to the rarity and quality of the resource in the context of all available opportunities. The uniqueness of a recreational opportunity and/or the presence or quality of a particular feature or setting should not be overlooked. Many parks and protected areas systems house extremely rare natural and cultural features and settings that may not be available elsewhere. Can the experience by provided elsewhere?

Obligatory values are based primarily on the direction of past governance and recreational uses, which should be a reflection of the collective values of the culture.

Obligatory values may be either formal or informal yet both are based on accepted facts and universal understandings. Formal obligatory values are those adopted through legislation, policies and management directives (e.g., *Canada's National Parks Act*) and informal obligatory values being generally accepted as a premise or condition (e.g., leave no trace). The issue with obligatory values is that legislation or policy governing decisions may change or, arguably, should change as society changes. As previously discussed, the predominant culture and associated values in society has transformed since the establishment of parks. In order to recognize those changes in society there has also been changes in the perspective and subsequent direction of the principle values of parks (e.g., from focusing on recreational opportunities to maintaining ecological integrity). The roles and uses of individual parks and protected areas have also undergone substantial reformatting, which may be attributed to the progressive influence of public and stakeholder involvement in setting management direction through planning processes. The context of obligatory values therefore may range spatially between each site and the whole system, as well as temporally from previous to current directives and commitments. For example, what activities are permitted within the system through legislation and which activities may be considered to be an appropriate at the local level?

Functional values are primarily linked to a particular site but may be considered as part of larger ecosystem scales and processes. These values concern the state of the resource and its associated recreational opportunities are specific to a defined ecosystem. The functionality of the natural and social processes however is typically framed at a broader level through mechanisms such as State of the Park reporting which require rigorous methods and procedures that may be universally applied. The most important principle is for the

continued health and integrity of the resource. The application of functional values therefore is directed through national level science and research that develops standards and norms associated with the state of the resource and subsequent reporting. Does the activity adversely impact the condition of the resource in a way that can not be mitigated through proper planning and management practices?

Operational values are applicable at the site, regional and national level of the agency. Although there may be site-specific management objectives, the operational considerations are typically reflective of regulations and policies developed at the national level and directed toward site level management. Site-specific operational values include elements associated with the physical carrying capacity of the site, such as providing the necessary infrastructure and services to support visitor use. The operational values typically look within the current context of the site yet should recognize future operational considerations and links to future growth of the activity or potential for increased demand on site management. How will allowing this activity affect current and future infrastructure and services and what needs to be addressed to manage this activity?

The main discourses related to non-preference-related values identified within the first workshop regarded the capacity to allow or support an activity, as well as how decisions made at an individual site may affect the rest of the national park system, specifically a concern over setting precedents. As such, the intended role of non-preference-related values in the early development of the framework was quite evident. The result sought is to identify principles and implement measures within the framework that allow for more rational, objective criteria for screening a recreational activity. Although the concept of carrying capacity was not explicit within the workshop reports, the latent perspective of establishing

acceptable limits or objectives is rooted within the dialogue over the criteria, scoring and application of the assessment framework. Recognition that these types of values are typically used to objectively rationalize or even direct decisions and, accordingly, helps to provide an amount of consistency and control at the system level. Figure 3 (p.99) is an attempt to illustrate the relationships between the non-preference-related values. Although they are considered exclusive, the different values help support each other through rationalized methods such as establishing norms and standards.

Preference-related values.

Preference-related values associated with parks and protected areas were separated into non-use values (i.e., activities that are not based on consumption or of the resource) and use values (i.e., activities that require the exploitation of the resource, such as recreational opportunities and their direct economic benefits). These values are reflective of the services and utilities that parks and protected areas offer. Five concepts were developed that related to strategic recreation planning and management: stewardship value, economic value, cultural value, spiritual value and recreational value.

Protected areas provide distinct opportunities to promote values for the preservation and conservation of nature. Stewardship values have significant benefits toward gaining support not only for protected area management but also for species protection. The development of visitor services and environmental education facilities and programs help to promote such stewardship values and promote a sense of 'ownership' and support for the existence of parks and protected areas.

The direct and indirect economic benefits of parks and protected areas are associated with the potential for tourism and sustainable development. Economic values are

characteristic of local and regional economies and are not directly reflective of the internal revenue generation or operational considerations of Parks Canada. This is an important and potentially understated aspect of parks and protected areas, particularly as it relates to the economic stability of park townsites and rural communities that depend on visitation.

Cultural values associated with Canada's parks and protected areas promote the communication of key messages through educational opportunities and interpretative programs and acknowledge the importance of significant natural and cultural heritage areas to the historical and social fabric of Canada. The maintenance of commemorative integrity, the potential for communicating important park messages regarding cultural heritage of the landscape, and the promotion of stewardship and conservation are examples of some of the primary goals related to the cultural significance of protected areas. These goals include working with Aboriginal peoples to include opportunities to learn and celebrate traditional activities and events. The cultural value of recreational activities in Canada's protected areas is often linked specifically to opportunities for education through natural and cultural heritage appreciation.

The incorporation of spiritual values recognizes the emotional and psychological significance of protected areas, especially to local communities and Aboriginal peoples. The spiritual significance of protected places is often strong and may be the reason why many people choose to visit them, and perhaps more significantly, to continue to enjoy them. Such values are typically associated with personal and group enjoyment and the appreciation or fulfillment directly connected to a specific place and/or activity.

Recreational values are physical benefits generated through the participation of recreational activities and associated experiences. Such values are exemplary of the direct

use of park resources. Recreational activities in protected areas may include both structured (e.g., soccer) and unstructured (e.g., cross-country skiing) activities, as well as special events (e.g., fishing competition). Activities also may be guided, by Parks Canada or commercial operation, or be self-directed. Furthermore, the quality of the experience may be relative to each individual or group and may be considered to be linked to the specific location and conditions.

Preference-related values were not a significant part of the working group's discussions during the first workshop, except during the group exercises to identify potential criteria for assessing a recreational activity. Since preference-related values are considered to be more value-laden, their purpose in the assessment process was to develop a frame for subjective criteria in order to facilitate relevant and responsive decisions. In Figure 4 (p.106), an important consideration to note is the linear pattern of the preference-related values which illustrates the mutually exclusive or siloed perspectives and approaches when addressing these values. The importance of this proposition is that, unlike non-preference-related values which generally support one another, preference-related values typically are exclusive, even conflicting objectives.

Valuation Relative to the Canada Parks Mandate

The second objective of the study was to explore how the values associated with recreational activities and visitor management in protected areas may be considered in regards to the Parks Canada Mandate of protection, visitor experience and education. Such an evaluation provides a better understanding of the value judgments embedded within the creation of the framework.

Parks and protected areas serve as an effective tool for supporting local, national and international biodiversity policies and as places for scientific research, wilderness protection, maintenance of environmental services, education, tourism and recreation, protection of specific natural and cultural features, and sustainable use of biological resources (Task Force, 1998). The question therefore to be considered is what recreational activities have a direct positive benefit for contributing to all elements of Parks Canada's mandate and directives?

The use of alternative means for evaluating recreational activities that better utilize existing planning and management tools, including zoning and facility development, may provide a better means to recognize the land use intent and unique recreational opportunities at the local level.

Recognizing Land Use Intent

The most difficult part of parks and protected management lies in determining whether and how particular resources should be used. A foundational aspect for examining such parks and protected area values lies in assigning such values and requires the acknowledgement of three main propositions: that all aspects of a park are of value; that all aspects of a park are of value, but not of equal value; and, that active management and intervention in nature is inevitable. The recognition of these propositions lies at the heart for valuing such areas and systems, yet how we determine, prioritize and manage such values continues to be explored. The potential contributions of a recreational activity toward the strategic direction for the protected areas system and to the vision of the individual site were recognized as a significant factor in assessing the potential benefits of an activity. An activity that strives to positively contribute to all three elements of the mandate, although unlikely, is

the ideal desired situation expressed by the group and would likely result in that activity being encouraged or perhaps supported by Parks Canada. The circumstances surrounding special events consider both the short-term and long-term benefits and impacts of allowing the activity to occur, in reference to assessing new or modified recreational activities.

Figure 8 (p. 139) provides a visual representation of how the various values might feed into each of the elements comprising the Parks Canada mandate, including some management considerations. The importance of this figure is to provide an illustration of how the non-preference-related and preference-related values may be connected to the existing Parks Canada mandate and directives. In an attempt to provide an alternative model (Figure 9, P.145) that recognizes the different resource uses in parks and protected areas, three cross-links were proposed as an attempt to bridge the variety of identified values, recognizing the diversity of sites and their corresponding vision and contribution to the overall protected areas strategy.

An Area of Conservation Interest provides recreational opportunities with a strong potential for promoting protection of natural and cultural resources. Such areas may be considered for promoting ideas of preservation and conservation through a fervent valuation of the resource focusing on representational, spiritual and stewardship values. Areas of Conservation Interest house unique features and landscapes that are considered as important to Canadians with the protection of key species, biophysical landscapes and resources being the primary focus. These areas would be considered for a higher level of protection and significant efforts made to maintain or restore their values and would be most likely be found in national parks, specifically within special preservation, wilderness and natural environment zones.

Areas of Social Interest provide recreational activities that promote and celebrate the integrity and authenticity of an area. An Area of Social Interest provides recreational opportunities with a strong potential for understanding through obligatory, functional and cultural values. Such areas are expected to have significant natural and cultural heritage values that provide opportunities for education and appreciation. These areas could focus on a variety of services for presenting natural and cultural heritage values. They provide opportunities for connecting people to their rich natural and social environments and are typical of national historic sites and within public service zones.

An Area of Recreational Interest provides recreational opportunities with a strong potential for high quality visitor experiences. Such areas offer recreational services in order to provide unique opportunities for enjoyment by considering the recreation, economic and operational values of the site. The focus could be to encourage new and meaningful ways for people to recreate in parks. An emphasis on allowing activities that utilize the unique features and settings should be considered, so long as any required precautions and/or conditions are set and that the resource values and other existing uses are not adversely affected. Such areas would be typical of national marine conservation areas and national parks, specifically in relation to wilderness, natural environment, outdoor recreation and public service zones.

These Areas of Land Use may provide a more effective and fair means for focusing the evaluation of activities by recognizing the objectives and opportunities of individual sites at the local level.

From Element-Based to Principle-Based Goals

The valuation of parks and protected areas identified that the desired outcomes of management decisions are essentially subjective in nature. The new Recreational Activities Assessment Framework is not a mechanism to replace existing management planning processes, which are already geared toward establishing a responsive desired future context, but to specifically augment decisions being made on the appropriateness of recreational activities within the site's current context. The principles of the framework are built on the premise that there will be a level of consistency across the system of parks and protected areas yet decisions are relevant to the local conditions and settings.

A shift from element-based goals (i.e., protection, visitor experience, education) to more principle-based goals (i.e., sustain or enhance the character of the place) may help to support such an approach. The four principles established by the working group for the Draft Recreational Activities Assessment Framework were proposed to address the potential opportunities and issues for an activity: to sustain or enhance the character of the place; to respect natural and cultural resources; to promote public understanding, appreciation and enjoyment; and, to value and involve local communities. These principles were established to provide general inquiries as to what is known about an activity and its potential implications. The resolutions under such principles are intended to provide knowledge and context for supporting management decisions instead of establishing a 'black box' method that determines management decision. This provides a more flexible and responsive approach to decision-making that allows managers to adapt to a variety of contexts and conditions.

Context of Decision-Making

Since parks and protected areas represent many of the country's precious and unique features and landscapes, the appropriate course of action may dictate that a local assessment be conducted either prior to or in concert with a national assessment. Regardless, in most cases the working group acknowledged that there is a need to establish a national direction for all recreational activities. Although the application of a two-tier assessment process is an admirable attempt by Park Canada to address more local level issues and opportunities, a critical concern however remains as to the degree of influence that the system level assessments will continue to impose on the local level. This may have significant consequence on the ability of the local level assessment to remain receptive to local considerations when examining the suitability of an activity, to adapt to natural and social changes, and to have autonomy over those decisions. When considering activities within the scope of a park or protected areas management plan, the desired outcomes and possible mechanisms for facilitating or managing that activity will likely be different from site to site and between the local and system levels. This reinforces the need for active public and multi-stakeholder involvement when deciding what the intent of an area should be.

Considerations for Future Research

A key limitation of the data identified from the two workshops is that the workshop reports do not include dialogue during group exercises. Also, the data represents only the collective discussion of expert knowledge over the criteria for the new framework, which for the purposes of this study, is delimited to the analysis of identifying broad concepts. A more detailed exploration of the knowledge claims and values therefore should be conducted

through a complete review of a local assessment process. The benefit of conducting such an examination would be to provide a better frame for observing and measuring the identified discourses from this study. The suggested design for the research would be to conduct a participative or non-participative, direct observational study in coordination with the complete application of the assessment. Using methods of discursive analysis the researcher would be able to measure the manifested or explicit dialogue *between* the participants. As a result, this would provide more detailed data and information on the knowledge claims expressed, specifically the discourse between expert and lay knowledge claims.

Future studies and planning initiatives may also use or benefit from collaborative concept mapping exercises that foster meaningful discourse and constructive understanding of the problem or issue (van Boxtel et al., 2002). Such an initiative could be incorporated as part of a normative decision process, where the participants strive to reach general understanding and agreement through collaboration. The intent of such future research conducted being to better understand the dynamics of the groups making decisions. Janis (1982) proposes some symptoms of what is referred to as groupthink:

- A very cohesive group is likely to exert pressures on dissenters to conform to the consensus view;
- An illusion of unanimity and correctness (i.e., if there is uniform agreement on one issue, it may give the appearance that the particular view is the only valid one), which may result in the loss of a creative search for other options or solutions;
- A negative stereotyping of outgroups, typical of political decision-making conducted in a conflictual intergroup context (Brown, 2000).

By examining elements that characterize poor decision-making, we may be able to identify

situations or processes that may limit the quality and, ultimately the success of decisions made. The desired approach is the development of a complex group that is constructively critical of the concepts being proposed and who are receptive of new ideas. These are important considerations when establishing multi-stakeholder groups to be involved in both the local and national level assessments. This will help to ensure that a wide range of perspectives are considered and that a collective solution to the problem is achieved.

Recommendations

As previously indicated, a constraint to the autonomy of decisions being made at the local level is the potential for the subjugation of the decisions at the national level. In order to mitigate the potential for elements of groupthink within the organization, local assessments should be conducted concurrently with national assessments when considering a new activity that is unique to the site in question or where there is significant potential for multiple benefits to the local communities.

Although obligatory values present a rational opportunity to allow or not allow an activity through screening, they are however still based on the democratic or common will of the people. In other words, legislation and policy may change or should change to address and/or accommodate a desired future outcome. The Recreational Activities Assessment Team should also consider the essence of an activity in relation to the guiding principles and take into account the potential for subjective interpretation and decontextualized nature of the legislative commitments and policies directing the decision.

Lastly, decision-makers and decision-groups must recognize the wide variety of knowledge claims and values that go into protected areas planning and management. This

study explored the broader level of these concepts in an attempt to better understand how each may be incorporated into the decision-making process.

Concluding Remarks

When the aspects of regionalism in decision-making practices and processes are studied there are some foundational benefits from each perspective. What are the advantages of decisions made through a system level approach? Is it the ability to see things on a broader scale; to deal with issues more strategically; to have a higher level of direction that promotes widespread expectations of what parks and protected should be about (mandate) or perhaps just to recognize common trends and issues that affect all sites within the system? On the other hand, what are the advantages of establishing a decision tool that benefits a more local level approach? Is it the ability to see things on the ground; to have a greater ability to be adaptive and try new approaches; or perhaps the recognition of determining what a park or protected area is about (vision). These are fundamental questions to be considered when exploring the differing perspectives held between system and local levels on approaches to decisions.

Paradoxically, what we are trying to achieve as a system is not necessarily what we are trying to achieve at the local level. The system tries to bring order and consistency while at the same time each site seeks to sustain its own autonomy and relevancy to its users. There needs to be some level of confidence in the abilities of the local process to make the right decision or to try a new approach, especially if you accept that special interest groups have considerable influence at all levels of the decision process. This perspective does not suggest a 'free for all' where generally unacceptable activities, those that go against the intent and

legislative commitments of parks and protected areas, would be entertained. This perspective recognizes the uniqueness of each site and situation and provides a mechanism to combat the misguided indoctrination of what is considered appropriate.

Ecological and commemorative integrity for an area can only be reached by recognizing the contextual nature of knowledge and acknowledging the potential biases that may stem from the acceptance of rational knowledge claims over relational knowledge claims. The development of local expertise and 'buy-in' can be aided by paying more explicit attention to the knowledge and values of affected groups or individuals, as a means of facilitating more comprehensive decision-making and especially to key processes such as understanding, communicating, assessing, planning, implementing, monitoring, and adapting to change. All concerned parties need to recognize such key steps or processes in decision-making in order to be prepared to participate efficiently and effectively along with other interested persons and groups (Nelson, 1994)

Interpretation of the working group's discussions identified implications of the framework and some of the key questions to be answered. What do we want to have at the site and does the activity adversely impact natural or social resources or the function of local communities? Is the opportunity sustainable? What types of recreational and tourism activities are suitable? Which activities include opportunities that enhance the site's vision and contribute to the system's mandate? The concepts of use versus non-use values are at the heart of such environmental discourse, specifically the concept of an optional or future value that parks and protected areas afford. The 'best' decision therefore considers the past purpose, the current use and the future opportunities of national parks, national historic sites and national marine conservation reserves.

The last thing to consider is the shifting cultural paradigms of society. The way that Canadians understand, view and utilize parks and protected areas is different than the way Canadians understood, viewed and utilized protected areas in the past. It is therefore reasonable to assume that future Canadians will know, value and use or not use such areas differently than today. Succinctly, the knowledge claims and values that are employed to make decisions on what and how certain recreational activities are permitted to exist are relative to their context. The purpose of the local assessment, utilizing local and traditional knowledge of the area, is to provide context in understanding how a recreational activity fits with the current use values of the site. This also recognizes the preference-related values that people hold for an area, specifically in regards to current stewardship, economic, educational, spiritual and recreational values. Alternately, the purpose of the national assessment is therefore instrumental in understanding the future use and non-use values for the site, in the context of a systematic or strategic direction. This recognizes the preference-related values that people hold for an area, specifically in regards to current representational, obligatory, functional and operational values. Together, the national and local assessments look to acknowledge both the national and international requests and trends as well as the regional and local concerns and conditions respectively.

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APPENDIX A: CONCEPT CODING

The primary phase of content analysis process requires the data to be condensed into smaller, manageable categories or concepts. These concepts can then be mapped in order to illustrate the individual relationships and interconnections between them. The second phase of analyzing the data is to organize the individual concepts into more complex themes. These themes or axial codes may be linked to more theoretical models or discourse themes. Each concept or thematic code has five parts, for example:

A one to three word label: **Social Science**

A definition: procedures intended to understand human behaviours and interactions

Flags: references to social research or procedures for measuring and/or monitoring norms, such as visitor motivations, expectations, experiences, etc…

Qualifications/Exceptions: typically done in a particular social setting and under specified conditions; follows an outlined set of procedures for observation and measurement

An exemplar: "*Typically we throw a lot of ecological information at them but very little social science information.*"

Expertise

Label/Concept: **Authoritative Knowledge**

Definition: knowledge held within a government authority responsible for the administration and management of a public service or resource

Flags: references to internal policies, procedures, directives, etc…; explicit knowledge; interactional or contributory expertise

Qualifications: must be a responsible public authority (i.e., Parks Canada)

Exemplar: "*What are other parks and countries doing?*"

Label/Concept: **Professional Knowledge**

Definition: explicit or tacit expertise gained through professional experience

Flags: references to other agencies, such as the United States National Parks Service or Forest Service; references to accredited individuals or organizations dedicated to natural or cultural heritage, such as the Sierra Club of Canada

Qualifications: must be recognized as a expert authority within the specific field; contributory expertise

Exemplar: "*What has somebody else found out about the conflict between mountain bikers and hikers*?"

Label/Concept: **Academic Knowledge**

Definition: formalized knowledge-base established through academic research

Flags: references to academia; research literature such as academic journals and papers

Qualifications: typically peer evaluated and scientific in approach

Exceptions: research principally conducted by authorities and professional organizations

Exemplar: "*Much of the information is in academic journals and academic papers and written for different purposes*".

Label/Concept: **Local Knowledge**

Definition: local knowledge gained through personal observation and experience and potentially informally shared amongst local communities and visitors

Flags: references to local informal knowledge claims; personal narrative; public publications or newsletters

Qualifications: generated through experience; informal or formal tacit knowledge claims; connected with local natural and social environments

Exceptions: authoritative or professional knowledge claims

Exemplar: "*folks that know the context*"

Label/Concept: **Traditional Knowledge**

Definition: knowledge claims that are formally transferred through personal or community activities, such as mentoring schemes, community records or ceremonies

Flags: local Aboriginal or general community knowledge; 'cultural truths'; historical references or narrative; local conditions or concerns

Qualifications: connected with local natural and social environments

Exceptions: authoritative or professional knowledge claims

Exemplar: "*Letting our Aboriginal partners define for us what spiritual and traditional activities are.*"

Non-preference-related Values

Label/Concept: **Representational Value**

Definition: the symbolic value of select attributes of a natural and/or cultural landscape or feature, including associated recreational opportunities

Flags: significance; uniqueness; rarity; contribution; public support for parks system

Qualifications: in reference to a system of related landscapes or features; must be formally identified and profiled

Exemplar: "*conditions in one park that make Zorb ball different.*"

Label/Concept: **Obligatory Value**

Definition: a value identified as being compulsory or required in order to achieve a desired outcome

Flags: references to governing legislation and policies; other applicable legislation, policies and/or processes, e.g., *Endangered Species Act*, Environmental *Assessment Act*; references to a system or strategic plan; tacit or unwritten norms or standards creating expectations; activity profile

Qualifications: explicit agreements in the form of treaties, regulations, legislation and directives; recognized informal obligations

Exceptions: operational procedures and directives

Exemplars: "*a framework that fits into whatever other policies and requirements the Parks Canada agency has*"; "*Does it meet the acts and regulations?.*"

Label/Concept: **Functional Value**

Definition: the value associated with natural and social systems that provide the necessary components and processes to perform essential environmental, cultural and recreational functions

Flags: references to elements related to environmental carrying capacity and ecological integrity, including impacts to biophysical features and species and ecosystem management; references to issues related to social carrying capacity and commemorative integrity, including impacts to historical/archaeological features or artefacts and recreational opportunities

Qualifications: methods for establishing and monitoring standards and norms are primarily determined through objective scientific research and expertise; supply of recreational opportunities

Exceptions: does not include designated features or species, e.g., charismatic megafauna

Exemplar: "*the effects of the activity on other activities or on other social constructs.*"

Label/Concept: **Operational Value**

Definition: values associated with the undertaking of strategic planning and physical management of park or protected area operations

Flags: references to elements of physical carrying capacity; infrastructure; budget; staffing; safety and liability; enforcement; cost and feasibility

Qualifications: must be conducive to agency procedures and/or directives

Exemplar: "*Are there sufficient resources to manage, mitigate and monitor*?"

Preference-related Values

Label/Concept: **Stewardship Value**

Definition: the conservation or preservation of featured resources for future direct or indirect use or intrinsic value

Flags: references to protecting special species or landforms of interest (e.g., charismatic megafauna); bequest values (i.e., held in reserve for future generations); existence or intrinsic values; respect

Qualifications: species, landscapes and systems of concern

Exceptions: does not refer to keystone or umbrella species; legislated endangered species; initiated specifically for future economic interest

Exemplar: "*get people to become passionately involved with the protection of the place*"

Label/Concept: **Economic Value**

Definition: the value associated with the direct and indirect economic benefits associated with parks and protected areas

Flags: references to tourism and sustainable development; industry; commercial; regional and local economies

Qualifications: public and private enterprises

Exceptions: Parks Canada revenue generation, such as entry fees and merchandising

Exemplar: "*Regional economic development should be considered.*"

Label/Concept: **Cultural Value**

Definition: the value that promotes the communication of natural and cultural heritage of a park or protected area through education and interpretation

Flags: heritage appreciation; interpretation; opportunities for education; key messages

Qualifications: links to site-specific objectives for heritage appreciation

Exceptions: spiritual connections with site; messages of system goals or objectives

Exemplar: "*convey park message*"

Label/Concept: **Spiritual Value**

Definition: value associated with personal and group enjoyment, appreciation or fulfillment directly connected to a specific place and/or activity

Flags: examples of traditional activities; 'sense of place'; connections with nature; emotional experiences

Qualifications: individual and interpersonal emotional benefits

Exemplar: "*Does it enhance public enjoyment*?"

Label/Concept: **Recreational Value**

Definition: value generated through the participation of recreational activities and associated experiences

Flags: recreational activities; demand for experiences

Qualifications: links recreational activities to specific a place or conditions

Exceptions: supply of recreational opportunities

Exemplar: "What ties Canadians to wilderness activities?"